

# Procedural Manual for Preparing Environmental Documents

2008 Version



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- GG. Potential Karst Features Map
- HH. Sole Source Aquifer Memorandum of Understanding
- II. Sole Source Aquifer Map
- JJ. List of Navigable Waters
- KK. Federal Highway Administration MSAT Guidance
- LL. Mobile Source Air Toxics Standard Language
- MM. Criteria Pollutants Information
- NN. INDOT Traffic Noise Policy
- OO. Indiana Outstanding Rivers List

## Update History

Last updated December, 2008. All previous revisions included in new version.

# *I. The National Environmental Policy Act Process*

## **I.A. Introduction**

The foundation of the National Environmental Policy Act (NEPA) process comes directly from [NEPA in Section 102\(2\)](#). It can be summarized as follows:

Agencies of the federal Government shall --

- Utilize a systematic, interdisciplinary approach in the planning and decision-making which may have an impact on the human environment.
- Include in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on --
  - The environmental impact of the proposed action.
  - Any adverse environmental effects which cannot be avoided should the proposal be implemented.
  - Alternatives to the proposed action.
  - The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
  - Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.
- Prior to making any detailed statement, consult with and obtain the comments of any federal agency which has jurisdiction by law or special expertise.
- Make them available to the public.

The Council on Environmental Quality (CEQ) regulations ([40 CFR §§ 1500-1508](#)) addresses the basic framework established in NEPA. The principles or essential elements of NEPA include:

- Assessment of the social, economic, and environmental impacts of a proposed action or project.
- Analysis of a range of reasonable alternatives to the proposed project, based on the applicants defined purpose and need for the project.
- Consideration of appropriate impact mitigation: avoidance, minimization and compensation.
- Interagency participation: coordination and consultation.
- Public involvement including opportunities to participate and comment.
- Documentation and disclosure.

A NEPA document must include a discussion of information that is incomplete or unavailable for a project evaluation of impacts in compliance with CEQ regulations (40 CFR 1502.22 (b)). The following information should be included in the resource sections as appropriate:

- A statement that such information is incomplete or unavailable.
- A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment.
- A summary of existing credible scientific evidence which is relevant to evaluating the reasonable foreseeable significant adverse impacts on the human environment.
- The evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

The Federal Highway Administration (FHWA) adopted the policy of managing NEPA project development and decision-making process as an "umbrella," under which all applicable environmental laws, executive orders, and regulations are considered and addressed prior to the final project decision and document approval. The conclusion of the NEPA process results in a decision that addresses multiple concerns and requirements. The FHWA's NEPA process allows transportation officials to make project decisions that balance engineering and transportation needs with social, economic, and natural environmental factors. During the process, a wide range of stakeholders (including the public, businesses, interest groups, and agencies at all levels of government) provide input into project and environmental decisions.

### References

FHWA (1992) *NEPA and Transportation Decisionmaking* December 2008  
<http://environment.fhwa.dot.gov/projdev/tdmpdo.asp>

TransTech Management, Inc. & Parsons, Brinckerhoff (2005) *Synthesis of Data Needs for EA and EIS Documentation - A Blueprint for NEPA Document Content* December 2008  
[http://www.trb.org/NotesDocs/25-25\(1\)\\_FR.pdf](http://www.trb.org/NotesDocs/25-25(1)_FR.pdf)

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### I.A.1 Applicability

This manual applies to all transportation projects developed by the Indiana Department of Transportation (INDOT) and to all Local Public Agency (LPA) road projects. It covers projects with federal funds (or other federal approvals) as well as those which use only state and/or local funding. Also included are trail projects, rehabilitation of historical transportation-related facilities or other projects that use highway or transportation funds.

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### I.A.2 Purpose

The purpose of the *Procedural Manual for Preparing Environmental Studies* is to provide assistance in complying with the National Environmental Policy Act (NEPA) and related federal laws, executive orders, regulations, and policies.

The focus of the manual is on statutory and regulatory requirements for environmental documentation on both INDOT and local projects. The manual sets forth document content and format, as required by law or regulation, and recommended format, if not specified by law or regulation. Reports and documents prepared for projects on the state highway system shall adhere to the content and recommended formats contained herein.

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## I.B. Funding Programs

Although the majority of the Indiana Department of Transportation (INDOT) projects are federally-funded highway projects, other types of projects may require INDOT review and approval. These projects will have different criteria for review and approval. For example, projects that are funded entirely with state and/or local money may not be covered by certain federal laws. In addition, projects funded through trail project funding allocations or programs for rehabilitation of historic transportation facilities will not follow the standard highway project development track and may need to be handled differently. However all of these projects are subject to the National Environmental Policy Act (NEPA) if they receive federal funding or require a federal action.

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### I.B.1 State-Funded Projects

For projects that are developed, designed and constructed using only state monies, the project sponsor must comply with state environmental laws, which may have different requirements than federal statutes. The state of Indiana established an environmental process for these projects (outlined in [327 IAC 11-1](#)), which are administered under the jurisdiction of the Indiana Department of Environmental Management (IDEM). These are separated into Categorical Exemptions, State Environmental Assessments (EA), and State Environmental Impact Statements (EIS). While projects that do not use federal funds are not specifically covered under the National Environmental Policy Act (NEPA), they must still comply with all other state and federal laws.

#### I.B.1.a State-funded Categorical Exemptions

##### Background

Pursuant to [327 IAC 11-1-3\(f\)](#), a list of Categorical Exemptions was prepared by INDOT and filed with IDEM (then called the Environmental Management Board). On August 10, 1975 a list of accepted “Categorical Exemptions” was issued, identifying projects that are anticipated to have little or no impact on the human and natural environment. They were:

1. Pipe culvert replacement.
2. Bridge painting.
3. Mowing.
4. Installation, modernization or maintenance of signs, traffic signals, pavement markings, highway lighting, and channelization within the existing right-of-way.
5. Patching and crack sealing of roadway surfaces.
6. Resurfacing existing pavement.
7. Guardrail and fence installation or repairs.
- 8. Herbicide treatment. (NOT ACCEPTED)\***
- 9. Storage and winter application of ice melting chemicals or sand. (NOT ACCEPTED)\***
10. Right-of-way abstracting, engineering appraising, property management and administration.
11. Landscaping and erosion control.
12. Safety projects such as pavement grooving, flare screen, safety barriers, and energy attenuators.

13. Addition or reconstruction of railroad crossing protection.
- 14. Rest area construction or modernization. (NOT ACCEPTED)\***
15. Reconstruction or replacement of an existing bridge crossing a stream, railroad, or roadway.
16. Addition of special facilities to an existing highway for the exclusive use of buses.
17. Slide correction measures which are not emergencies but are necessary to preserve the highway facility.
18. Modernization of an existing highway by widening less than a single line (sic.) width, adding shoulders, adding auxiliary lanes for climbing, turning or weaving, and correcting substandard curves and intersections.
- 19. Construction of a new rural two-lane highway which does not provide new access to a new area and which would not be likely to precipitate significant changes in land use or development patterns. (NOT ACCEPTED)\***

\*Items listed in bold “(NOT ACCEPTED BY IDEM)\*” were proposed to IDEM but were not accepted, based on a determination that these project types did have a potential to impact the environment.

### **Process**

All projects listed above may be prepared as Categorical Exemptions. They may be documented on the Environmental Screening/CE-1 Form, with a notation as to which project type applies. Further information may be found in the [Indiana Categorical Exclusion Manual](#).

For projects which appear to be minor but are not listed above, the Office of Environmental Services (OES) should be contacted for guidance as to what level of documentation is required. This may require a review comparable to a standard Categorical Exclusion, or may involve a full state EA or EIS.

## **I.B.1.b State-Funded Environmental Assessments and State-Funded Environmental Impact Statements**

### **Background**

State-funded projects that are not categorically exempted are discussed in [329 IAC 5-2-2](#) and [329 IAC 5-2-3](#). These projects will require either a state Environmental Assessment (EA) or Environmental Impact Statement (EIS), dependent on the impacts that are anticipated. The Office of Environmental Services (OES) should be contacted to verify the proper handling of these state-funded projects.

### **Process**

The format for a state EA is provided in [329 IAC 5-1-5](#) (and in Appendix I), which outlines the impact assessments that must take place in reviewing the project. As with federally-funded projects, coordination with resource agencies is required to evaluate project impacts and complete some portions of the document.

If the impacts of the project are found to not be significant, then the EA completes the state's documentation requirements. If impacts are determined to be significant, or the project is

controversial, then a state EIS must be prepared. The OES should be contacted for further guidance on these projects.

Any project with state funding must receive a State Certificate of Approval if it will affect properties eligible for or listed on the National Register of Historic Places. This is separate from the Section 106 process and is required even if no federal funds are involved. For the specifics of this requirement, please consult the [INDOT Cultural Resources Manual](#).

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## I.B.2 Locally-Funded Projects

### **Background**

While projects that use only local funding do not fall under the National Environmental Policy Act (NEPA), all other applicable laws must still be obeyed, including but not limited to:

- The Endangered Species Act (ESA).
- The Clean Water Act (CWA).
- The Clean Air Act as Amended (CAAA).
- Resource Conservation and Recovery Act (RCRA).
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- The Indiana Cemetery Law.
- Accidental Discovery of Human Remains regulations.

In addition, any federal action (such as a Federal Highway Administration (FHWA) Interchange Justification (IJ) or a permit from a federal agency) triggers NEPA review by the agency with approval authority. Project sponsors should be careful to ensure that they have satisfied all appropriate requirements.

The distinction between locally sponsored, locally funded projects and locally sponsored, federally funded projects must be mentioned. The latter type of projects typically receive 80% federal funding while requiring the LPA to contribute a 20% match in funding. This type of project must comply with all NEPA requirements, including environmental documentation.

A public/private cooperative effort named the “LPA Project Streamlining Initiative” provides a shorter and more efficient delivery of locally sponsored, federally funded projects. The reduction of the time required for the preparation of the necessary environmental document for each project is an important part of this new process. The goal of this effort is to complete most locally sponsored projects, up to the point of contract letting, within a two year period. When completed and authorized, a guidance document will be posted to the [LPA section](#) of the INDOT website.

### **Process**

All environmental documentation for a locally-sponsored project must still demonstrate compliance with all applicable laws. Therefore the format of the environmental document will vary by the type of project and the regulations that apply. Projects which require state or federal

approval will generally be required to follow a standard NEPA format in the form of a Categorical Exclusion (CE), Environmental Assessment (EA), or Environmental Impact Statement (EIS).

Locally-sponsored CEs that require the Indiana Department of Transportation (INDOT) or the FHWA review should be coordinated through the appropriate INDOT District (see Appendix D). Local EAs and EISs will be coordinated by INDOT's Office of Environmental Services.

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### I.B.3 Recreational Trail Program

#### **Background**

The Recreational Trails Program (RTP) was created under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and then broadened under the Transportation Equity Act for the 21st Century (TEA-21). It provides funds for the development and maintenance of recreational trails and related facilities. In Indiana the program is administered by the Department of Natural Resources (DNR) with Indiana Department of Transportation (INDOT) review.

#### **Process**

While some elements of RTP project development will differ from traditional transportation projects, the DNR and other applicants are still required to show compliance with the Federal Highway Administration (FHWA) regulations and policies. This includes early coordination with other resource agencies and mitigation for impacts, if necessary. However, RTP projects are specifically excluded from the requirements of Section 4(f) (See Section II.B.14), since by definition the project is recreational, not for transportation. Environmental documents for RTP projects are almost always Categorical Exclusions (CEs).

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### I.C. Document Types

The National Environmental Policy Act (NEPA) requires that federal agencies disclose the results of their analysis and the effects of project implementation on the environment, and solicit comments on the proposals from interested and affected parties. The purpose of documenting the NEPA process provides for complete disclosure to the public; allows others an opportunity to provide input and comment on proposals, alternatives, and environmental impacts; and provides the appropriate information for the decision-maker to make a reasoned choice among alternatives.

Transportation projects vary in type, size, complexity, and potential to affect the environment. The class of document will direct the level of study that will be required for a particular project, from the level of stakeholder involvement to the level of detail required in field studies. Therefore the class of document must be identified as early as possible in development. To

account for the variability of project impacts, three basic "classes of action" determine how compliance with NEPA is carried out and documented:

- [Categorical Exclusions \(CEs\)](#) are issued for actions that do not individually or cumulatively have a significant effect on the environment. Refer to the [Indiana Categorical Exclusion Manual](#) for detailed information regarding the format of CEs.
- An [Environmental Assessment \(EA\)](#) is prepared for actions in which the significance of the environmental impact is not clearly established. Should environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment, a [Finding of No Significant Impact \(FONSI\)](#) is issued. If a FONSI is determined not to be appropriate, then an EIS must be prepared.
- An [Environmental Impact Statement \(EIS\)](#) is prepared for projects when it is known that the action will have a significant effect on the environment.

Any of these documents may be amended to reflect changes to project. These changes are called reevaluations or additional information (AI) documents. Refer to the [Supplemental EIS/Reevaluations](#) section for changes to EISs and for CEs and EAs, refer to the [Indiana Categorical Exclusion Manual](#).

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## I.C.1 Categorical Exclusions (CEs)

### Background

Categorical Exclusions (CEs) are actions which meet the definition contained in the Council on Environmental Quality (CEQ) regulations in [40 CFR 1508.4](#) and

*...based on past experience with similar actions, do not involve significant environmental impacts. They are actions which: do not induce significant impacts to planned growth or land use for the area; do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic, or other resource; do not involve significant air, noise, or water quality impacts; do not have significant impacts on travel patterns; or do not otherwise, either individually or cumulatively, have any significant environmental impacts. ([23 CFR 771.117\(a\)](#))*

Any action may be classified as a CE if it meets the criteria from 23 CFR 771.117(a) and if it does not exhibit any of the criteria in 23 CFR 771.117(b):

*Any action which normally would be classified as a CE but could involve unusual circumstances will require the administration, in cooperation with the applicant, to conduct appropriate environmental studies to determine if the CE classification is proper. Such unusual circumstances include:*

1. *Significant environmental impacts;*
2. *Substantial controversy on environmental grounds;*

3. *Significant impact on properties protected by Section 4(f) of the DOT Act or Section 106 of the National Historic Preservation Act; or*
4. *Inconsistencies with any federal, state, or local law, requirement or administrative determination relating to the environmental aspects of the action.*

In consultation with the Office of Environmental Services (OES), the preparer should consider the class of action and verify that the project will not involve any of the four unusual circumstances in 23 CFR 771.117(b) shown above.

### **Process**

The Indiana Department of Transportation (INDOT) and the Federal Highway Administration (FHWA) have agreed to divide CEs into four levels, depending on the type of action and the anticipated impacts of the project. This should be done at the screening stage, and will determine:

- The amount and type of agency coordination required.
- The amount of impact documentation required.
- Who must review and approve the document (District, Central Office, FHWA).

More detailed information regarding the preparation of CEs may be found in the [Indiana Categorical Exclusion Manual](#).

### **References**

Federal Highway Administration *NEPA Documentation- Categorical Exclusions* December 2008  
<http://www.environment.fhwa.dot.gov/projdev/docuce.asp>

INDOT Office of Environmental Services (2008) *Indiana Categorical Exclusion Manual*  
December 2008 <http://www.in.gov/indot/3295.htm>

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## **I.C.2 Environmental Assessments (EAs) and Findings of No Significant Impact (FONSI)**

### **Background**

Projects that do not qualify as a Categorical Exclusion (CE) due to the possible magnitude of the impacts may instead require an Environmental Assessment (EA) to be completed ([23 CFR 771.19](#)). The primary purpose of an EA is to help the Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) decide whether or not an Environmental Impact Statement (EIS) is needed. If the project is a major action but is determined to not result in a significant impact, a Finding of No Significant Impact (FONSI) is prepared.

### **Process**

The EA process starts with the formation of a Project Management Team. The purpose of the team is to facilitate communication between agencies concerned with the planning process and

those concerned with the National Environmental Policy Act (NEPA) process. Based on input from this team, a range of initial alternatives is proposed for preliminary development as well as input from stakeholders through early coordination (see Section I.F).

Community Advisory Committees (CACs) may be required for EAs, if deemed necessary by the FHWA and INDOT based on anticipated impacts and controversy. If a CAC is determined to be warranted, a meeting should be conducted during the early coordination review period to help identify community issues of concern. Thirty days should be allowed for the CAC to review the project, with the meeting scheduled at the midpoint.

Based on input from coordinating agencies and the public, the study area, purpose and need, and preliminary alternatives are revised. Any alternatives that are no longer considered reasonable due to fundamental engineering flaws, fundamental safety flaws, fundamental environmental flaws, or failure to meet the purpose and need are eliminated from further review. This will leave a range of reasonable alternatives to undergo further analysis in the EA document.

The EA document may follow the format of the FHWA-Indiana CE/EA form (available in the [Indiana Categorical Exclusion Manual](#)), or may be written similarly to a full EIS format. This may make more sense when an EA covers a large geographic area, includes a wide range of alternatives, and/or is functioning as an EIS reevaluation. While the format and range of resources to be reviewed are similar to a CE, a higher level of analysis may be required for areas of controversy or where impacts to resources have the potential to be significant. When the document is complete, two copies must be submitted to INDOT for review and approval. After INDOT has determined that the document is acceptable, it is submitted to the FHWA for review and approval. At this time the EA should be sent to the Public Hearings section so that a hearing may be scheduled.

If INDOT and the FHWA agree that the project will not have significant impacts, a request for a FONSI should be submitted to INDOT by the document preparer. The FONSI request should include a copy of the revised EA, as appropriate, the final Section 106 documentation, the public hearing transcript, copies of any comments received and any responses, and a compilation of all mitigation commitments including those required to satisfy Section 106. The FHWA reviews the documentation and prepares the FONSI for distribution by INDOT.

When a FONSI has been issued, three copies of the EA and the FONSI must be provided to the project manager, who will retain one for reference and distribute the others to the project designer and to the construction engineer at the appropriate stage of project development. One copy is provided to the US Fish and Wildlife Service office in Bloomington and another to the Chesterton office if the project is in northern Indiana. One copy of each document is provided to the district and one copy of each document is retained in the project file at the Office of Environmental Services (OES). The Public Hearings Office receives a copy of the FONSI to complete its file. FHWA keeps their copy of the FONSI; their review copy of the EA serves as their file copy.

If it has been determined the project will have significant impacts, a FONSI cannot be issued and the preparation of an EIS is required. The OES should be contacted to facilitate converting the EA to an EIS.

## References

Federal Highway Administration *NEPA Documentation- Categorical Exclusions* December 2008  
<http://www.environment.fhwa.dot.gov/projdev/docuce.asp>

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## I.C.3 Federal Environmental Impact Statements

### I.C.3.a Preparation of Federal Environmental Impact Statements

#### Background

The National Environmental Policy Act of 1969 (NEPA) requires a federal Environmental Impact Statement (EIS) for major federal actions that significantly affect the quality of the human and natural environment. An EIS is a full disclosure document that details the process and analytical methodologies through which a transportation project was developed. It includes consideration of a range of reasonable alternatives, analyzes the potential impacts resulting from the alternatives in terms of context and intensity, describes mitigation measures and demonstrates compliance with other applicable laws and executive orders.

The Council on Environmental Quality (CEQ) has issued regulations for implementing NEPA in [40 CFR 1500-1508](#), with EISs specifically addressed in [40 CFR 1502](#). The Federal Highway Administration's (FHWA) related regulations for EISs appear at [23 CFR 771](#), more specifically in [23 CFR 771.115](#), [23 CFR 771.123](#) and [23 CFR 771.125](#). The FHWA has also issued Technical Advisory [T6640.8A](#), entitled *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*, which provides detailed guidance on preparing EIS documents. Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) prescribes a new environmental review process for EIS projects.

The Indiana Department of Transportation (INDOT) and the FHWA have developed the [Streamlined EIS Procedures](#) to implement the requirements of SAFETEA-LU to establish a coordinated planning and project development process for major transportation projects in Indiana. These procedures allow documentation developed by the FHWA to serve as a substantial part of the documentation required by other permitting and funding agencies. This process is intended to ensure that basic issues are resolved prior to the approval of the Draft Environmental Impact Statement (DEIS) by early identification of agency issues, when the greatest flexibility exists to address them. The DEIS can then focus on addressing outstanding public and agency concerns regarding avoidance, minimization, and mitigation.

For some projects the NEPA process may begin with the preparation of an Environmental Assessment (EA)/Corridor Study, and then change to an EIS if it is determined that the project will likely result in significant impacts. For other projects the sponsor may proceed directly to the preparation of an EIS if significant impacts are anticipated.

The lead agency is responsible for the completion of the environmental review process and documentation. The FHWA is designated as the federal lead agency for any transportation project that requires FHWA approval. The direct recipient of federal funds for the project (usually INDOT) must serve as a joint lead agency. INDOT remains legally responsible for the performance of local governmental agencies and serves as a joint lead agency for local projects. A local governmental agency that is the project sponsor may be invited, but is not required, to serve as a joint lead agency. Private entities acting as project sponsors or co-sponsors of the project cannot serve as lead agencies and are limited to commenting on environmental documents.

An EIS must be written for several audiences, including environmental professionals, public officials, highway engineers, construction contractors, and the general public. To help preparers compose documents that are useful and understandable, the American Association of Highway and Transportation Officials and the American Council of Engineering Companies (AASHTO/ACEC) developed a publication entitled *[Improving the Quality of Environmental Documents](#)*. This publication identifies the following best practices that result in higher-quality and more useful EIS documents:

- Tell the story so the reader can easily understand the purpose and need for the project, how each alternative would meet the project goals, and the strengths and weaknesses associated with each alternative.
- Briefly explain long-running efforts to resolve complex or controversial issues, focusing on concerns that were raised and how these concerns were addressed.
- Provide effective summaries, effective graphics and visual elements to help communicate complex issues or comparisons.
- Separate technical information or high-volume materials into appendices or use cross-references.
- Avoid technical jargon, minimize abbreviations, define terms, and spell out acronyms.
- Present the facts as they are. Do not advocate for the project or any particular alternative.

## **Process**

The EIS process is completed in the following steps, which are discussed in detail below:

1. [Initiate EIS](#)
  - a. Initial Project Identification
  - b. Conduct Kick-off Meeting
  - c. Define Study Area
  - d. Develop Draft Purpose and Need
  - e. Letter of Project Initiation
  - f. Notice of Intent
  - g. EIS Scope
  - h. Coordination Plan and Public Involvement Plan
  - i. Identification and Formal Invitation of Cooperating Agencies
2. [Conduct Research and Technical Studies](#)
  - a. Early Coordination and Formal Invitation of Participating Agencies
  - b. Document Public Participation in the EIS Scoping Process and Confirm Scope

- c. Revise Draft Purpose and Need
- d. Traffic Data
3. [Identify and Evaluate Conceptual Solutions](#)
  - a. Identify, Develop, and Analyze Conceptual Solutions
  - b. Screen Conceptual Solutions and Develop Purpose and Need/Conceptual Solutions Screening Package Report
  - c. Participating/Cooperating Agency Meeting and Review.
  - d. Public Information and CAC Meetings
  - e. Resource and Regulatory Agency Meeting
  - f. Revisions
  - g. Confirm Environmental document type with FHWA
4. [Develop Reasonable Alternatives](#)
  - a. Develop Preliminary Alternatives
  - b. Perform Engineering and Environmental Studies
  - c. Analyze and Screen Alternatives
  - d. Preliminary Alternatives Screening Package
  - e. Public Information Meeting
  - f. Participating/Cooperating Agency Consultation
  - g. Identify Reasonable Alternatives
5. [Identify Preferred Alternative](#)
  - a. Environmental Review
  - b. Preliminary Draft EIS
  - c. Analyze and Screen Alternatives
  - d. Preferred Alternative
  - e. Final DEIS
  - f. Public Hearing
  - g. Address Public Comments
6. [Develop Preferred Alternative](#)
  - a. Design/Environmental Studies
  - b. Air Quality analysis
  - c. Advance Preferred Alternative
7. [Advance Preferred Alternative](#)
  - a. Preferred Alternative Mitigation Package, Permits, and Agency Response
  - b. Noise Analysis and Noise Abatement
  - c. Final Environmental Document Activities
8. [Environmental Approval](#)
  - a. Publish and Distribute FEIS
  - b. Prepare/Approve Record of Decision
  - c. Publish Notice of Statute of Limitation notice
9. [Post-Record of Decision Environmental Activities](#)
  - a. Additional environmental work such as archaeology and noise
  - b. Commitments
  - c. Mitigation
10. [Reevaluations/Supplemental Documents](#)

## 1. Initiate Environmental Impact Statement

After identification of an EIS project and its initial purpose and need, the project sponsor convenes a project team, identifies the study area, confirms or redefines the initial purpose and need and notifies the FHWA and the public of intent to initiate a project. The project sponsor then initiates the EIS scoping process, and develops a plan to coordinate with agencies and the public.

### a. Initial Project Identification

The [INDOT Project Development Process \(PDP\) Manual](#) details the various plans and programs under which projects are initially identified and prioritized, including corridor studies, legislative mandates, INDOT Planning Oversight Committee (IPOC), and the safety/congestion program. Beginning project development assumes the need for a transportation improvement but does not assume the specific facility or project to be constructed.

The project sponsor should assign a project manager who is responsible for the project and assemble a project management team (PMT) consisting of representatives from the lead agencies (usually INDOT and the FHWA), project sponsor, Region 5 Federal Transit Administration (FTA) (if applicable), MPOs (if applicable), and project consultants to provide guidance during project development.

### b. Conduct Initial Kick-off Meeting

An initial kick-off meeting is held to define key personnel at each step of project development. Other specific items to be discussed at the kick-off meeting include the preliminary project schedule, budget, and draft Public Involvement Plan (PIP).

### c. Define Study Area

For INDOT projects, the study area and project termini are determined by the Office of Urban and Corridor Planning. This is the general area for which data is to be collected and from which the stakeholders are to be identified. It must be large enough to include all areas that contribute to the transportation problem and encompass a range of solutions appropriate to solving the transportation problem.

### d. Draft Purpose and Need Statement

A purpose and need statement demonstrates why solutions are being sought to address an existing or projected transportation problem. An initial purpose and need is developed by INDOT's Office of Urban and Corridor Planning during the original identification of a project and is refined throughout the EIS process. The joint lead agencies, in cooperation with the project manager, redefine or confirm the initial purpose and need statement. The resulting statement is referred to as the draft purpose and need statement and will be used in the project development process as the basis for identifying and analyzing alternatives and establishing evaluation criteria for the selection of the preferred alternative. This statement will be further evaluated for sufficiency later in the project development process below in [Section 2.c.](#)

e. Letter of Project Initiation

A Letter of Project Initiation (LOPI) is a notification sent to the FHWA by the project sponsor when initiating the environmental review process indicating basic information about a proposed project. The new environmental review process, which includes the preparation of a LOPI, is required for all EISs for which the original Notice of Intent was published in the *Federal Register* after August 10, 2005. The notification must contain the following information regarding the proposed project:

- The type of work, termini, length, and general location.
- Any other federal approvals anticipated to be necessary.
- The timeframe within which the environmental review process should be started.

A LOPI is prepared when the proposed project is sufficiently defined to provide the information required by [SAFETEA-LU Section 6002](#) and the project sponsor has demonstrated a readiness to proceed with the NEPA phase of the project. For INDOT projects, the Manager of the OES drafts the LOPI for the Commissioner of INDOT or an authorized delegate to send to the FHWA.

f. Notice of Intent

A Notice of Intent (NOI) is a notice published by the FHWA in the Federal Register that indicates the intention to prepare or consider an EIS ([40 CFR 1508.22](#)). The NOI shall contain the following:

- Description of the proposed action and possible alternatives.
- Description of the agency's proposed scoping process including whether, when, and where any scoping meeting will be held.
- The name and address of a person within the agency who can answer questions about the proposed action and the EIS.

A draft NOI is submitted to the FHWA by the appropriate official of the sponsoring agency ([40 CFR 1501.7](#) and [40 CFR 1508.22](#)). For INDOT projects, the Commissioner of INDOT signs the NOI. In order to ensure acceptance for publication in the Federal Register, the NOI must be prepared and processed in strict conformance with the guidelines in [Appendix B of the TA](#). For convenience, [SAFETEA-LU Section 6002](#) allows the NOI to be combined with the LOPI as long as the information required a NOI by the TA is included.

g. EIS Scoping

The EIS scoping process is an early and open process for determining the range of issues to be addressed in the EIS and for identifying potential significant impacts related to the proposed action. The EIS scope of a project consists of the range of actions, alternatives, and impacts to be discussed in the environmental document (see 40 CFR 1508.25 for a more complete definition). The purpose of EIS scoping is to identify all of these actions, alternatives, and impacts and plan for their assessment. The scoping process is initiated after the NOI.

The scoping process is discussed in detail in 40 CFR 1501.7. In brief, the lead agency does the following:

- Invites the participation of affected federal, state, and local agencies, any affected Indian tribes, the proponent of the action, and other interested persons (including those who might not agree with the action). See Section h below.
- Determines the scope and the significant issues to be analyzed in depth in the EIS.
- Identifies and eliminates from detailed study the issues which are not significant or which have been covered by prior environmental review.
- Allocates assignments for preparation of studies and sections of the EIS among the lead and cooperating agencies (if any), with the lead agency retaining responsibility for the environmental document. See Section h below.
- Indicates any other environmental documents which are being or will be prepared that are related to but are not part of the scope of the project under consideration.
- Identifies other environmental review and consultation requirements so the lead agency and cooperating agencies (if any) may prepare other required analyses and studies. See Section h below.
- Indicates the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decision-making schedule.

The lead agency may use the EIS scoping process to set page limits on environmental documents and set time limits for steps in the preparation and review of the EIS. The lead agency may also adopt procedures to combine its environmental assessment process with its scoping process or combine early scoping meetings with other early planning meetings. The results of the EIS scoping process are documented for the administrative record.

h. Coordination Plan and Public Involvement Plan

After the EIS is initiated, the lead agencies develop the coordination plan and public involvement plan (PIP) to be executed by the PMT. The coordination plan outlines coordination strategies and how the responsibilities for informing and involving agencies and the public during the environmental review process will be divided. The PIP is a component of the coordination plan and specifically details public involvement opportunities, activities, and responsibilities for the project.

A schedule of coordination activities with the public and agencies is included in the coordination plan, with defined timeframes for input and deadlines for agency approvals. The coordination plan must be shared with the public and agencies to inform them of what to expect and to identify any disputes as early in the process as possible. Once the schedule has been established, any modifications must be shared with the participating agencies, cooperating agencies and the public and documented in the administrative record. The coordination plan will establish the timing and form of the required collaboration with participating agencies in developing methodologies and level of detail required in the environmental analysis.

The coordination plan must include the following agency involvement activities:

- Formal invitations to cooperating and participating agencies.
- Early coordination.
- Agency review meetings.
- Preferred alternative and mitigation review.
- Requests for comment or approval of studies, documents, or permits.

The PIP outlines how the lead agencies have divided responsibilities for compliance with EIS public involvement procedures. The PIP establishes a schedule of public involvement activities and opportunities for public input. Public involvement activities that should be included in the PIP may include (but are not limited to) the following:

- Public notices soliciting comments regarding various topics (Section 106, Section 4(f), etc).
- Community Advisory Committee (CAC) related activities.
- Public information meetings.
- Notices of Survey.
- Public Hearings.
- Websites, newsletters, advertising, etc.

A CAC is required for all EIS-level projects. A CAC is a group of individuals and representatives from the community and community organizations that meet periodically to discuss and provide comments regarding issues and concerns related to the proposed project. A discussion of potential CAC members should correspond with the development of the PIP.

The coordination plan must include the following three key milestones for formal public and agency comment. These three milestones are discussed in greater detail in later steps of the EIS process:

- Purpose and Need/Conceptual Solutions screening.
- Preliminary alternatives screening.
- Selection of the preferred alternative and mitigation.

Refer to [Section I.E. Public Involvement](#) for more information regarding public involvement and PIP development and implementation.

i. Identification and Formal Invitation of Cooperating Agencies

Potential cooperating agencies include any federal, state, or local agencies other than the lead agencies that have jurisdiction by law or special expertise with respect to any potential environmental impact involved with the project. The PMT should conduct a meeting to identify agencies that should be formally invited to serve as cooperating agencies. Once potential cooperating agencies have been identified, the lead agencies send potential cooperating agencies a letter formally inviting them to serve in this capacity. The invitation requests that the agency either accept or decline the role of cooperating agency.

Lead and cooperating agencies should define specific responsibilities for each project. Lead agencies may request that cooperating agencies complete technical studies for resources, approve permits, or approve other activities decided on a project-by-project basis. The lead agencies should make every effort to identify and resolve cooperating agency concerns early in the EIS process.

See the INDOT and the FHWA publication [Streamlined EIS Procedures](#) for a list of items that should be included in the invitation letter and the [FHWA Environmental Review Process Toolkit](#) for sample invitation letters for cooperating agencies.

## 2. Conduct Research and Technical Studies

After the project is initiated, the preparer should begin to conduct studies to gather information about the project area. This may include site visits to preliminarily identify resources for early coordination with resource agencies. The information gathered from these studies and early coordination responses will be used to revise or confirm the draft purpose and need. Traffic studies are also initiated at this stage.

### a. Early Coordination and Formal Invitation of Participating Agencies

Early coordination is a formal request to stakeholders to comment, provide information concerning environmental resources, and identify areas of concern in the general study area prior to the development of preliminary alternatives. The preparer should visit the project study area to collect data and images for use in early coordination materials. A map or aerial photograph of the project area should be prepared indicating all buildings, resources, and other items that may be of concern. The visit to the project study area may indicate specific items for which further field work may be necessary to verify or further evaluate potential resource involvement. Potential resources that should be examined are discussed in [II. Environmental Considerations](#).

The preparer sends an Early Coordination Letter (ECL) to organizations, individuals, and appropriate federal, state, and local agencies that may have an interest in the project or that may have special expertise in a specific field of study. The ECL should include a description of the general study area and the existing conditions, the draft purpose and need, and the project process and schedule. The information should be provided in the greatest level of detail known at the time the ECL is sent. See [I.F. Early Coordination](#) for additional information regarding the early coordination process and a list of early coordination recipients.

During early coordination, potential participating agencies are identified and invited to be involved in project development. Participating agencies may include any federal, state, tribal, regional, and local government agencies that may have an interest in the project, but may not include nongovernmental organizations or private entities. All agencies identified as cooperating agencies are also participating agencies. These agencies participate in the development of the purpose and need statement, EIS scoping process, range of alternatives, methodologies, and the level of detail for the analysis of alternatives. Lead agencies should work with participating agencies to identify any

issues of concern regarding the project's potential environmental impacts and provide meaningful and timely input on unresolved issues.

The project sponsor will initially identify potential participating agencies, and the lead agencies will collectively decide which agencies to invite. If a federal agency has been invited to be a cooperating agency, it should also be invited to serve as a participating agency. A federal agency invited to participate is designated as a participating agency unless the agency declines the invitation by the specified deadline. If the ECL serves as the formal invitation, it must specifically state that the letter is being used for both early coordination and invitation to become a participating agency.

b. Document Public Participation in the EIS Scoping Process and Confirm Scope

The preparer documents the results of the EIS scoping process to provide a written record of all comments and concerns that were raised by participating/cooperating agencies and members of the public. The documentation is retained in the project file and summarized in the [Public Comments and Agency Coordination](#) chapter of the EIS. The documentation includes:

- A list of participants in the scoping process.
- Information that was provided to the participants or obtained from the participants.
- A summary of decisions that were made on the range of issues to be addressed and significant concerns identified.

INDOT and the FHWA review the EIS scope to confirm that it has identified all significant actions, alternatives, and impacts. The EIS scope is revised if substantial changes are made in the proposed action, or if significant new circumstances or information arise which might change the proposal or its impacts.

c. Revise Draft Purpose and Need

The draft purpose and need statement is evaluated by the joint lead agencies in coordination with the project manager, and is confirmed or revised based on input from early coordination and initial research and technical studies. At this stage in the process, the draft purpose and need statement should be detailed enough to qualitatively and quantitatively define the transportation problems and adequately establish the need for the project. It should be comprehensive, specific, and concise so that decision makers and the public can use it to compare project alternatives against associated impacts. Evaluation criteria for alternatives will be determined when the draft purpose and need statement has been revised.

d. Collect and Analyze Traffic Data

The preparer collects and analyzes traffic data related to the project study area. This data serves as a baseline of current conditions and provide analysis of projected future conditions. The traffic data may vary from project to project but should include the following:

- Current counts and traffic statistics.
- Traffic modeling and forecasting.
- Crash data.

### 3. Identify and Evaluate Conceptual Solutions

Conceptual solutions are ideas that are considered for meeting the purpose and need. These initial conceptual solutions are developed to include cost, general resource impacts, and to obtain input from participating/cooperating agencies, resource agencies, and the public. Both the conceptual solutions and the purpose and need may be modified by information obtained from these sources. The evaluation of conceptual solutions is based on this information and the ability of each proposed solution to satisfy purpose and need. The result of this evaluation is a set of proposed conceptual solutions that are developed in the next major step to determine reasonable alternatives.

#### a. Identify, Develop, and Analyze Conceptual Solutions

The starting point for developing an initial set of conceptual solutions is the purpose and need statement. The solutions should be creative and broad but should also be appropriate to the identified needs. The initial conceptual solutions should include all possible solutions, including different transportation modes, demands, and management options, and the general location of each solution. The no-build option is also defined at this stage. The initial set of conceptual solutions should incorporate ideas and address concerns from stakeholders, including the participating/cooperating agencies, resource agencies, and the public.

A cost analysis is developed for each initial conceptual solution. The costs should be capital costs or capital costs plus life-cycle costs. The costing approach, base year, and inflation factors should be the same for all analyses.

Under SAFETEA-LU, the lead agencies must determine, in collaboration with the participating agencies, the appropriate methodologies to be used and the level of detail required in the analysis of alternatives.

#### b. Screen Conceptual Solutions and Develop the Purpose and Need/Conceptual Solutions Screening Package Report

The project management team develops criteria for evaluating the reasonableness of the initial set of conceptual solutions and the methodology for comparing the solutions. These are the critical elements of the Purpose and Need/Conceptual Solutions Screening Package Report that is sent out for comment.

The evaluation criteria may be quantitative or qualitative, although quantitative criteria are preferred. The criteria may be similar to those used in existing state, local, or regional transportation plans. Examples of criteria for determining reasonableness include cost, level of service, safety, impacts to the human and natural environment, engineering design issues, land use, and displacements.

The project sponsor applies the criteria and methodology to the solutions and documents the results. The documentation should identify all conceptual solutions that were considered, describe the criteria and methodology that were used, define the no-build solution, identify solutions that were eliminated (and why each was eliminated), present the estimated costs for each solution, and recommend one or more solutions for further

consideration. A matrix is strongly suggested as a clear way to present the results of the analysis. The solutions that survive this screening process are developed as feasible conceptual solutions

The criteria, methodology, and results are provided to stakeholders in the Purpose and Need/Conceptual Solutions Screening Package Report. The report contains the following information:

1. A brief summary that describes the following:
  - a. The core and secondary objectives of the project and the basis for the objectives as found in policies, data, and agency and public input.
  - b. The description of the evaluation criteria and methodology.
  - c. The description of any other screening factors.
2. The purpose and need narrative and supporting documentation.
3. A description of each of the initial conceptual solutions.
4. The results of evaluating each initial conceptual solution.
5. The reasons for eliminating some solutions and for recommending others for development as feasible conceptual solutions.

The report is reviewed by the project management team. On approval, the report is provided to the participating/cooperating agencies, the CAC, and the regulatory agencies. The specific information to be included in the cover letter to the agencies is in the INDOT/FHWA [\*Streamlined EIS Procedures\*](#).

c. Participating/Cooperating Agency Review Period.

The participating/cooperating agencies have 30 days in which to review the Purpose and Need/Conceptual Solutions Screening Package Report and provide comments. During this review period, the project sponsor holds meetings with the participating/cooperating agencies, the public, and the regulatory agencies to discuss the results of the screening process.

i) Public Information and CAC Meetings

The project management team presents the Purpose and Need/Conceptual Solutions Screening Package Report to the public and the CAC to obtain comments and input on the purpose and need and the conceptual solutions. The summaries and minutes of these meetings are retained as documentation and provided to the participating/cooperating agencies within five business days.

ii) Resource and Regulatory Agency Meeting

The project sponsor consults with resource and regulatory agencies on the purpose and need and conceptual solutions through an interagency review meeting or conference call. This consultation is held after the public meeting and the CAC meeting. It is helpful to meet near the likely project location and include a field trip to view the area. Minutes are provided by the project sponsor to the participating/cooperating agencies within five business days.

The participating/cooperating agencies may use the minutes of these meetings in preparing their response. In their response, the participating/cooperating agencies are asked to comment on the following items:

- Statement of core project objectives.
- Evaluation criteria for alternatives.
- Additional conceptual solutions for consideration.
- Modification of conceptual solutions.
- Modifications to study area or termini.
- Specific resource issues.
- Agency response to invitation to be a participating or cooperating agency.
- Any additional key information.

d. Revisions

The purpose and need and the conceptual solutions may be revised by the project management team based on input received. The purpose and need, termini, and study area may be refined or changed and conceptual solutions may be added, eliminated, or modified. The comments from the public, the CAC, the regulatory and resource agencies, and the participating/coordinating agencies are incorporated into the report.

e. Confirm Environmental Document Type with the FHWA

The final Purpose and Need/ Conceptual Solutions Screening Report is submitted by the project manager to the project management team for acceptance. The acceptance of the purpose and need and level of documentation can be documented at a project management team meeting or conference call. The FHWA then confirms the type of environmental document based on this report.

4. Develop Reasonable Alternatives

From the conceptual solutions that were developed in the previous phase of the project, preliminary alternatives are identified to be further studied for possible engineering concerns and environmental impacts. A Preliminary Alternatives Screening package is assembled after these studies have been completed and distributed to the stakeholders for review and comment. After input has been received, the joint lead agencies will determine which of the preliminary alternatives are reasonable and will be included for further studies. Reasonable alternatives must satisfy the purpose and need, have logical termini, demonstrate independent utility, and must not restrict the consideration of future transportation alternatives.

a. Develop Preliminary Alternatives

As lead agencies develop the preliminary alternatives they must provide opportunities for the involvement of the public and participating agencies, including cooperating agencies, and all input must be considered. The level of involvement depends on the overall size/complexity of the project and must be consistent with the established coordination plan.

Collaboration with cooperating agencies is required to determine appropriate methodologies to be used and the level of detail that will be required in the analysis of alternatives. Consensus is not required, but the lead agencies must consider the views of

the cooperating agencies before making a decision on a particular methodology. The timing and form of collaboration must be identified in the coordination plan. At the discretion of the lead agencies, methodologies may be developed incrementally, with the initial methodology that is developed during conceptual solutions being refined with further collaboration after an initial impact analysis has been performed.

b. Perform Engineering and Environmental Studies

Preliminary engineering and environmental studies will help with selecting reasonable alternatives to be advanced for further study. The required studies vary from project to project depending on such factors as terrain, degree of urbanization and ecological factors. Engineering studies done at this phase of the project are completed using information that is already available, such as aerial photographs and topographic maps. Environmental studies may require field visits to complete, but should not be detailed at this point. The following is a list of some of the studies that may be required.

1. Cultural Resources Literature Review/Records Check: This study locates, identifies and evaluates cultural resources within the project area. Refer to Section II.B.13 Cultural Resources or the [INDOT Cultural Resources Manual](#) for more information.
2. Phase 1 Ecological Surveys: These studies may include database searches as well as field surveys. Refer to [Section II.C](#) for more information.
3. Hazardous Materials Site Visit Form: Reviews of databases and information collected during site visits or property owner interviews. Refer to [Section II.B.9](#) Hazardous Materials and Regulated Substances for more information.
4. Relocation Assistance Program Conceptual Stage Survey: The Conceptual Stage Survey provides an indication of the potential impacts to residences and businesses, the availability of comparable properties, an analysis of the financial impact to the project cost and other variables that will be taken into consideration for each potential alignment. For more information, refer to the [Relocation Manual](#) in the Production Management Division's Office of Real Estate.
5. Preliminary Air Quality Hot Spot Analysis: The Office of Environmental Services (OES), in coordination with the FHWA, determines whether a PM2.5 hotspot analysis is required. A CO hotspot analysis must be incorporated into all EIS projects. Studies are initiated by the preparer and reviewed by the OES. Refer to [Section II.B.7b](#) Hotspot Analysis for more information.
6. Social and Economic Resource Reports: These reports address possible social and economic impacts of proposed projects. Refer to [Section II.B.3](#) Social, Community and Economic Impacts for more information.

c. Analyze and Screen Alternatives

The preliminary alternatives are screened to remove alternatives that are not practicable due to costs, overall effectiveness of meeting the purpose and need of the project or environmental impacts. The goal is to identify a range of preliminary alternatives that represents the full range of conceptual solutions. This initial analysis will determine if there is a fundamental engineering, safety or environmental fatal flaw, or a failure to meet basic purpose and need (P&N) that would render a given alternative not reasonable for NEPA consideration. The evaluation criteria must be consistently applied to the full range of preliminary alternatives.

d. Preliminary Alternative Screening Package

The Preliminary Alternatives Screening Package is a report that includes the purpose and need, a summary table of the preliminary alternatives, the results of the preliminary alternative screening process, the proposed methodology to be used in the analysis of reasonable alternatives, and the results of the environmental studies. The package is assembled by the preparer and approved by the PMT, then distributed to stakeholders for input.

e. Public Information Meeting

After the Preliminary Alternatives Screening Package has been prepared, a public information meeting is conducted to present it to the public and CAC. The meeting should be an informal presentation of the various alternatives that seeks the input of the public. The format of the meeting should be coordinated with INDOT's Public Hearings Office, who will schedule and advertise it. Following the meeting, the preparer provides a meeting summary and major concerns raised by the public, as well as an explanation of how the concerns will be addressed. The public information meeting is held prior to any coordination with participating/cooperating agencies, to allow the agencies the benefit of public input.

Public involvement opportunities for alternatives development can be combined with the purpose and need involvement opportunities. However, if the purpose and need is altered as a result of the public involvement, additional public involvement may be required for any additional or revised alternatives. Opportunity for involvement must be offered before a decision is made on the range of alternatives that will be discussed in the NEPA document.

f. Participating/Resource Agency Consultation

After the public information meeting has been completed, coordination with the various participating/cooperating agencies is initiated to discuss the results of the preliminary alternatives analysis, the scope/methodologies used for evaluating the preliminary alternatives, and to determine whether additional environmental studies are required. The agencies have 30 days to review the materials with a meeting or conference call scheduled midway through the review period.

The preparer sends a summary of this meeting, including any issues that were identified, to the participating/cooperating agencies within seven days via email (including to those not in attendance). The participating/cooperating agencies then have the remainder of the 30 days to submit written comments. Ultimately, the administrative record for the project must document any issues identified by the stakeholders and how these issues were addressed.

g. Identify Reasonable Alternatives

A reasonable alternative satisfies the purpose and need, has logical termini and independent utility, and will not restrict the consideration of future transportation alternatives. Reasonable alternatives are determined by the FHWA and INDOT based on engineering and environmental studies and comments received from stakeholders.

Alternatives which are determined to be reasonable are advanced for further engineering and environmental study.

There are times when an alternative that is not reasonable by these criteria will still be carried forward, such as when another agency requests inclusion or there is a public expectation that it will be assessed. In such cases, it should be clearly explained why the alternative is not reasonable (or prudent or practicable) and why it will be analyzed in detail.

5. Identify Preferred Alternative

From the reasonable alternatives, a preferred alternative is selected for additional detailed studies and inclusion in the Draft Environmental Impact Statement (DEIS). The FHWA and INDOT will decide which preliminary alternatives will be retained for further study and the scope of additional studies to be undertaken. Additional engineering and environmental studies and stakeholder involvement will be completed to determine the preferred alternative.

a. Environmental Review

The types of additional environmental studies that will be required vary from project to project. It is the preference of INDOT and the FHWA that all required environmental studies are completed and reviewed prior to the completion of the DEIS, but in certain limited circumstances this may not be possible (such as inability to obtain property access). If studies must be deferred beyond the time of the DEIS or FEIS approval, they must be identified in the commitments section of the document as future work to be completed. When the studies have been completed, they are submitted to the OES for review and comment.

At this stage the designer develops the design for the reasonable alternatives, which should include horizontal/vertical alignment, typical section, intersection design, interchange design and preliminary drainage. This information is provided for each alternative to the preparer to complete the additional environmental studies required.

b. Preliminary DEIS

A DEIS is a detailed document which discusses the environmental impacts of the proposed action to community, natural, socio-economic and cultural resources (including Section 4(f) and avoidance, minimization, and potential mitigation measures). The preliminary DEIS includes a summary of completed engineering and environmental studies, and should identify and discuss any major concerns that have been identified by participating/cooperating agencies.

Coordination with participating/cooperating agencies is required for impacted resources in order to determine avoidance, minimization and mitigation strategies. The preparer documents the avoidance and minimization efforts (including best available data on bridge lengths, retaining walls, cross-section revisions, alignment shifts, etc.) in the preliminary DEIS and includes a general discussion of potential mitigation strategies and anticipated future agency coordination in each subsection of the Environmental

Resources, Impacts and Mitigation chapter of the DEIS, e.g., wetlands, historic, forest, etc.

Commitments are design features and actions made throughout the project development processes to the public, resource agencies, community leaders, and property owners on how a project will be developed and implemented and how impacts will be mitigated and project enhancements considered. Commitments included in the preliminary DEIS must differentiate between measures that are (1) firmly committed to being implemented through the approval of the environmental document and (2) those that will be further evaluated in later phases of project development.

After all coordination has been completed and the preliminary DEIS has been completed, it is distributed to the PMT and cooperating agencies for a 30 day review.

c. Analyze and Screen Alternatives

After all environmental and construction comments have been addressed, the designer submits the Reasonable Design Alternatives to the Manager of the Office of Urban and Corridor Planning, who evaluates the alternatives in consultation with the FHWA. The reasonable alternatives are analyzed and screened based on completed engineering and environmental studies and stakeholder input to determine the preferred alternative.

d. Preferred alternative

The Manager of the Office of Urban and Corridor Planning identifies the preferred alternative in coordination with the project manager, the designer, Manager of the OES, the District Planning Administrator, the FHWA and any others as appropriate. The preferred alternative must be identified in a decision document that is signed by the appropriate authority within each lead agency. The DEIS may officially identify the preferred alternative. INDOT and the FHWA have agreed to make every effort to identify a preferred alternative in the DEIS.

A separate letter or other decision document accepted by the lead agencies may be used when INDOT wants to develop an alternative, which has not yet been identified in a signed NEPA document as the preferred alternative, to a higher level of detail. The INDOT Commissioner may send a letter (electronic or hard copy) to the other lead agencies identifying the preferred alternative and briefly stating the reasons for that preference. If the other lead agencies accept the identification of the preferred alternative at that time, each one will so indicate to the other lead agencies. In deciding whether to accept the identification of the preferred alternative, the FHWA will take into consideration its ability to comply with federal requirements such as Section 4(f), the Section 404(b)(1) guidelines, the Executive Order on Floodplain Management, etc. Once a preferred alternative is officially approved by the lead agencies, subsequent NEPA documentation should disclose the selection.

After public and agency comment responses to the DEIS have been posted on the INDOT website, the INDOT Commissioner may send a letter to the FHWA Indiana Division

Administrator requesting approval to perform detailed design (up to 60%) on the preferred alternative described in the draft environmental document.

f. Final DEIS

The preliminary DEIS is updated based on any substantive comments that are received from the project management team and the cooperating agencies. The updated DEIS is given to the project management team with an explanation of the comments received and how the comments were addressed. Once these revisions have been finalized, the DEIS is forwarded to the FHWA for approval.

Once the FHWA is satisfied that the comments have been satisfactorily addressed, the FHWA signs the DEIS and returns it to INDOT for printing and distribution. The printing and distribution of the approved DEIS can be accomplished by the preparer, but copies of the distribution letters should be provided by both INDOT and FHWA. A notice of availability of the DEIS is published in the Federal Register by the EPA.

After the notice of availability of the DEIS has been published in the Federal Register a 45 day comment period for EIS documents begins. SAFETEA-LU mandates that the DEIS comment period not exceed 60 days unless a different comment period is agreed upon in advance by the lead agencies, the project sponsor, and all participating agencies.

After the DEIS is finalized, the EPA rates it for environmental impact and adequacy. These ratings provide the EPA's recommendations for improving the EIS. The possible ratings include lack of objections (LO), environmental concerns (EC), environmental objections (EO), and environmentally unsatisfactory (EU). A rating of anything other than LO will require additional work before the EPA will approve of the project. In addition, adequacy of the document is assessed as adequate (1), insufficient information (2), or inadequate (3) are ratings that can be received for the adequacy of the DEIS. An inadequate rating will require either a supplemental EIS or a revised DEIS. Refer to the [EPA EIS Rating System Criteria](#) for more information.

g. Public Hearing

After the preferred alternative has been approved by IPOC and the FHWA, and the DEIS has been published and released for public involvement, the public hearing can be held. The following should be submitted to the INDOT Public Hearings Program Coordinator to start the public hearing process:

- Three sets of design plans that are 10% to 15% complete.
- Three copies of the DEIS.
- Names and addresses of affected property owners.

The formal public hearing is scheduled and held in accordance with INDOT's *Public Involvement Procedures* (See section [I.E. Public Involvement](#)). The public hearing should not be held any sooner than 15 days after publication of the DEIS notice in the Federal Register. A transcript of the meeting is provided to the preparer and the project manager within 21 days after the hearing.

#### h. Address Public Comments

All substantive comments recorded at the public hearing and comment period must be summarized and addressed. The summary and responses are given to the project manager and reviewed by the FHWA and the appropriate INDOT managers to ensure that they are accurate and consistent before release. Once the responses are approved, they are posted to the INDOT website by the Public Hearings Office. After they are posted, the INDOT Commissioner sends a letter to the FHWA Division Administrator and to the appropriate offices of other lead agencies, if applicable, requesting approval to perform detailed design on the preferred alternative described in the draft environmental document. The request should contain the following information:

- Reasons why the agency wants to develop the preferred alternative to a higher level of detail before completion of NEPA review, including the specific federal laws, impacts, resources, and mitigation measures with which compliance would be facilitated by the proposed differential treatment of the alternative.
- The general nature and extent of the work the agency would perform on the preferred alternative if the request is approved, and
- The reasons why greater design detail will not prejudice the lead agencies consideration of other alternatives.

The FHWA should document its determination that the relevant conditions described in Section 6002 are met before any further project development begins. This documentation may be in form of a response letter. In accordance with SAFETEA-LU, the additional development of the preferred alternative may not proceed beyond the level necessary to identify ways to avoid or further minimize impacts, to develop mitigation, or to comply with other applicable environmental laws. The degree of additional development needed and allowable will depend on the specific nature of the impact being mitigated or resource being protected, or the level of information required to comply with other applicable laws.

#### 6. Develop Preferred Alternative

Once approval is received, additional environmental studies and design work can now be completed on the preferred alternative.

##### a. Design/Environmental Studies

Once the DEIS has been published and all of the comments have been addressed, additional environmental studies and design work should be completed for the preferred alternative. The designer should consult the DEIS when preparing detailed design plans (30% complete) to minimize or avoid sensitive areas that were identified, such as Section 4(f) properties, wetlands, critical habitat, hazardous waste sites, cemeteries, etc. The design plans are submitted to OES for review and comment.

As part of this step, the following environmental studies, as applicable, must be completed and submitted to the OES for review and approval.

- Draft Archaeological Survey.
- Draft History/Architecture Survey.
- Draft Noise Analysis.

- Draft Final Section 4(f) Determination.
- Draft Ecological Survey Report.
- 404/401 Permit Determination.
- Documentation for Section 106 and MOA.
- Final Air Quality Hotspot Analysis.
- Phase 2 Site Investigations.

b. Air Quality Analysis

Once stage 1 detailed design plans of the project are complete, the preparer requests a conformity determination from the local MPO through the Office of Urban and Corridor Planning. If the project is in Greene or Jackson County, a Conformity Analysis for Rural Non-Attainment Area should be requested through the Office of Urban and Corridor Planning. The results of this analysis should be incorporated into the FEIS.

7. Advance Preferred Alternative

In this stage the project sponsor develops the preferred alternative, evaluates the need for permits and mitigation, and assesses the need for noise abatement.

At the beginning of this stage, the designer develops detailed plans for the preferred alternative that avoid sensitive areas described in the draft environmental document. These are called Stage 2 Detailed Design Plans in the PDP. Participating/cooperating agencies and the CAC are given an opportunity to comment on the preferred alternative plans and associated proposed mitigation measures. Based on the Stage 2 design, a noise analysis is completed and public input on the need for noise abatement is obtained.

The results of these analyses are incorporated in the Final EIS (FEIS), which is reviewed by the OES, the FHWA, and the cooperating agencies. If a decision is made not to finalize the EIS, the project sponsor must publish a Notice of Intent in the Federal Register advising of the decision and reasons for not completing the EIS.

a. Preferred Alternative Mitigation Package, Permits, and Agency Response

The Preferred Alternative Mitigation Package (PAMP) documents the mitigation measures that are proposed for the preferred alternative. The PAMP contains a summary of the preferred alternative and any modifications made to the preferred alternative since the DEIS. The PAMP narrative explains the rationale for choosing the preferred alternative over the other alternatives. It also summarizes public and agency concerns and explains how these concerns will be addressed in the FEIS. Each project element that requires mitigation and the proposed mitigation measures are mapped and described in detail. Proposed mitigation measures must be grouped by those that are firmly committed and those that are held for further evaluation.

The draft PAMP is presented to the project management team for review. On approval, it is then distributed to the CAC and the participating/coordinating agencies for review and comment. The information that must be included in the cover letter may be found in the INDOT/FHWA [Streamlined EIS Procedures](#). The agencies have 30 days to respond.

The project sponsor schedules a review meeting with the participating agencies to occur half way through the 30 day response period. Minutes of this meeting should be distributed to the agencies within seven days. The participating/cooperating agencies provide comments on the response to agency issues, the rationale for selecting the preferred alternative, and proposed mitigation. The documentation of this consultation process must record agency concerns and how these concerns were addressed.

Based on information in the PAMP, the preparer evaluates the need for waterway permits. The OES comments on this preliminary permit determination as part of preferred alternative verification. There is more information on the preliminary permit determination in the OES's [Waterway Permits Manual](#).

b. Noise Analysis and Noise Abatement

The project sponsor commissions a study of noise impacts for the preferred alternative and the feasibility of abating any impacts. The completed noise analysis is sent to INDOT's noise committee through the OES. If appropriate, the noise committee develops the final noise wall recommendations that are then approved by the Deputy Commissioner or designee. A public information meeting is held on the proposed location of noise walls to obtain comments from the public on the desirability of noise walls where warranted. Finally, the noise analysis and outcome of public involvement are included in the FEIS. See the [INDOT Traffic Noise Policy](#) for more information.

c. Final Environmental Document Activities

Finalizing the EIS requires incorporating studies and documentation of all activities and decisions that have taken place since release of the DEIS. Generally these are proposed mitigation measures, hazardous materials investigations, archaeological field investigations, and additional public and agency involvement. The document at this stage is called the preliminary FEIS.

These additional studies and documentation are incorporated in the preliminary FEIS in specific chapters. Descriptions of proposed mitigation measures appear in the Environmental Resources, Impacts, and Mitigation chapter and are grouped by those that are firmly committed and those that will receive further consideration. Any required detailed hazardous materials investigations and archaeological investigations are finalized and are also included in this chapter.

The OES and the project sponsor address all substantive agency and individual comments, including those on the PAMP, that have been received since release of the DEIS and incorporate this response in the Comments and Response chapter of the preliminary FEIS. This section includes a summary of major coordination meetings with the CAC, the agencies, elected officials, advocacy groups, etc.

If there are many comments of the same nature, a single response that addresses the many similar comments may be included. The response should adequately address the issue or concern raised by the commenter or, where substantive comments do not warrant further response, explain why they do not, and provide sufficient information to support that

position. The FHWA and INDOT comments on the DEIS should be addressed in the FEIS but not be included in the comments discussion. If issues remain that cannot be resolved, the FEIS should identify the concerns, the steps taken to resolve the issues, and the positions of the respective parties. Where issues are resolved through this effort, the FEIS should demonstrate resolution of the concerns.

An FEIS can contain a provision limiting the time period for judicial review. This language is called the statute of limitations (SOL) provision. If used, the FEIS should contain a summary of the SOL provision and the process for publishing notice of its use in the Federal Register. The exact language to be used in the FEIS is in the INDOT/FHWA [Streamlined EIS Procedures](#).

The preliminary FEIS is submitted to the OES for review and approval for distribution. The preliminary FEIS is also submitted to the FHWA for review, which includes a 30 day review by the FHWA counsel for legal sufficiency. All interagency disagreements and comments must be resolved before the FEIS may be distributed to the public.

## 8. Environmental Approval

Before the FEIS can be approved, it must go through a series of reviews in order to allow agencies the opportunity to comment and for those comments to be considered. Once the FEIS is approved, a Record of Decision (ROD) must be prepared. After both documents have been signed by the FHWA, they must be distributed. The preparation, distribution, and approval of the FEIS and the ROD are done in accordance with [23 CFR 771](#) and [40 CFR 1502.19-1505](#).

### a. Publish and Distribute FEIS

After the preliminary FEIS is completed, it is circulated to the Project Management Team for their review and comments. Before the FHWA can approve the FEIS, they must verify that all necessary revisions are incorporated into the document to address any substantive comments that are received. After comments are addressed, the INDOT and the FHWA sign the FEIS and submits it directly to the EPA, who will then publish a Notice of Availability for the FEIS in the Federal Register (see Appendix J for the full distribution list).

### b. Prepare/Approve Record of Decision

The Record of Decision (ROD) presents the basis for the selection of the proposed alternative. It is prepared after the FEIS has been approved, and by CEQ regulations (40 CFR 1506.10(b)), can be signed no sooner than 30 days after the FEIS notice. This is in order to provide time for any federal agencies that find the project environmentally unsatisfactory to refer their objections to the Council on Environmental Quality (CEQ) for review. The draft ROD must include the following ([40 CFR 1505.2\(c\)](#), [40 CFR 1505.2\(b\)](#)):

- Statement of the decision (selected alternative).
- A description of the alternatives considered.
- The environmentally preferable alternative(s).
- A summary of any Section 4(f) approval ([23 CFR 771.127\(a\)](#)).

- A statement as to whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not.
- An explanation of proposed mitigation.
- The final version of the Commitments Summary Form.
- Any monitoring and enforcement programs.
- A summary of comments on the FEIS (Responses to comments do not need to be included).

INDOT submits the draft ROD to the FHWA for their signature once the following steps are complete:

- The FEIS is approved.
- The 30-day waiting period for the notice of availability has passed.
- All comments to the FEIS are satisfactorily resolved.

After the FHWA has signed the ROD, the preparer distributes copies of the ROD, incorporated into the approved FEIS, to all federal, state, and local agencies and private organizations and members of the public who provided substantive comments on the DEIS or who requested a copy in accordance with [40 CFR 1502.19](#) of NEPA (see Appendix J for the full distribution list).

c. Publish Notice of Statute of Limitations

SAFETEA-LU Section 6002 established a 180-day Statute of Limitations (SOL) on claims against USDOT and other federal agencies for certain environmental and other approval actions. An SOL is required for all EIS projects, but may also be used for other classes of documents if the agency determines it to be prudent. A determination as to whether an SOL is appropriate will be made by the FHWA and INDOT on a project-by-project basis. Should INDOT desire to request an SOL, they forward a draft Federal Register Notice of Limitation on Claims to the FHWA for review and action. If the SOL is acceptable, the FHWA approves the Notice and forwards it to the Federal Register for publication.

9. Post-Record of Decision Environmental Activities

After the ROD has been signed, it is necessary to conclude any additional work, and to follow through with any commitments made in the FEIS including all mitigation.

a. Additional environmental work

Any remaining environmental work should be completed as stated in the FEIS. This can include archaeology, a second noise analysis prepared later on in design, or a Phase II investigation for hazardous materials.

b. Commitments and Mitigation

After the FEIS is approved, the commitments, mitigation, and recommendations from the document will be incorporated into the design, land acquisition, and construction phases of the project development process. The Commitments Summary Form (see Appendix G and Appendix H), discussed in [Section II.D](#) of this manual, functions to ensure that project development following the completion of the NEPA process follows through on

commitments made in the FEIS. This form should include information on mitigation measures and other commitments in the project plans, and as necessary, information for implementing and monitoring the measures during construction and maintenance.

#### 10. Reevaluations/Supplemental Documents

INDOT and the FHWA have prepared the Environmental Consultation Form (Attachment 4 of the [Indiana Categorical Exclusion Manual](#)) to be used by the project sponsor prior to plan submission to determine whether the scope or impacts have changed. This form documents a review of whether or not conditions of the project have changed and whether the project is still consistent with the FEIS. If this review shows that the EIS is no longer consistent with the project's scope or impacts, a written re-evaluation is required.

A written reevaluation is also required ([23 CFR 771.129](#), [CFR 771.130](#)) if a period of three years elapses between approvals, or if major steps to advance the action have not occurred within three years of the most recent approval. After the approval of the FEIS, the FHWA must be consulted prior to requesting any major approvals or grants to establish whether or not the approved EIS remains valid. The purpose of the reevaluation is to determine whether there have been changes in the project or its affected environment, or whether new information exists which would require the preparation of a supplemental EIS (SEIS) or a new Draft EIS (DEIS). There is no required format for these reevaluations; the level of analysis and documentation, if any, should be agreed upon by the FHWA and INDOT. Regardless of format, it must address the following:

- Environmental requirements as they exist at the time of the reevaluation.
- Any new issues identified since the prior approval.
- Changes in the project, the entire project area, and project impacts.
- Any necessary additional studies and coordination with other agencies that will be necessary to identify new concerns.
- Additional public involvement that may be necessary.
- Summary of all prior approvals.

In certain circumstances, a reevaluation is not required. If, after reviewing the reevaluation, the FHWA concludes that a supplemental EIS (SEIS) or a new DEIS is not required, the decision should be appropriately documented in the next major approval along with a history of all previous environmental approvals.

A supplemental environmental document is required by [40 CFR 1502.9\(c\)](#) when there are changes, new information, or further developments on a project which results in significant environmental impacts that were not identified in the most recently distributed version of the DEIS or FEIS. Once a decision has been made to supplement the FEIS, a Notice of Intent (NOI) must be published. This requirement does not apply to a supplemental DEIS. For all types of reevaluations, additional public involvement may be necessary.

There is no required format for a supplemental Environmental Impact Statement (SEIS), but it should provide sufficient information to briefly describe the proposed action, the reason(s) why a supplement is being prepared, and the status of the previous Draft or Final EIS. The

SEIS only needs to address those changes or new information that are the basis for preparing the supplement and were not addressed in the previous EIS.

Valid portions of the approved document should not be repeated; instead they should be referenced and summarized. When a previous EIS is referenced, the SEIS transmittal letter should indicate that copies of the original (draft or final) EIS are available and will be provided to all requesting parties.

New environmental requirements which became effective after the previous EIS was prepared must be addressed in the SEIS to the extent that they apply to the portion of the project being evaluated and are relevant to the subject of the supplement. Additionally, to provide an up-to-date status of compliance with NEPA, the supplement should summarize the results of any prior reevaluations that have been performed for portions of or the entire proposed action.

An SEIS will be developed using the same process (draft SEIS, final SEIS, ROD) as the original EIS, except that scoping is not required.

## References

For a list of references, refer to the [References](#) section at the end of the EIS section.

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## I.C.3.b Format of Federal Environmental Impact Statements

### Background

While a variety of standards exist, the FHWA encourages and accepts alternative document content and format. The decision on an appropriate format for an EIS should be made in consultation with the lead agencies, with consideration given to the resources and controversies associated with the project. The requirements for EIS format are spelled out in [23 CFR 771](#) and [40 CFR 1500-1508](#). Additionally, a range of guidance documents have been issued to clarify the law and recommend best practices.

The FHWA's 1987 Technical Advisory [T6640.8A, Guidance for Preparing and Processing Environmental and Section 4\(f\) Documents](#) (the TA), established the agency's most recent formal recommendation regarding the format of EIS documents. Since issuance of the TA, the FHWA has also developed further guidance documents and directives that address specific aspects of NEPA process and documentation. While the TA and guidance documents offer three possible formats for EISs, INDOT prefers what is called the condensed format.

The condensed FEIS avoids repetition of material and should briefly reference and summarize information from the DEIS which has not changed. For each major section, the discussion should focus on changes in the project, its setting, impacts, technical analysis, and mitigation that have occurred since the DEIS was circulated. In addition, the condensed FEIS must identify the preferred alternative, explain the basis for its selection, describe coordination efforts, and include

agency and public comments and responses, and any required findings or determinations. An additional copy of the DEIS need not be provided to those parties that received a copy of the DEIS at the time the condensed FEIS is circulated.

The publication by the AASHTO/ACEC Committee in cooperation with the FHWA entitled [Improving the Quality of Environmental Documents](#) suggests a refinement to the format which differs from the format described in T6640.8A in two key areas. It combines the “Affected Environment” and “Environmental Consequences” chapters into one chapter entitled “Environmental Resources, Impacts, and Mitigation” and divides the “Alternatives” chapter into two chapters entitled “Alternatives Considered” and “Comparison and Selection of Alternatives”. The AASHTO/ACEC Committee format is the preferred format for EIS documents prepared by INDOT.

### **Process**

The EIS document should tell the story of the project in a way that the reader can easily understand the purpose and need for the project, how each alternative would meet the project goals, and the strengths and weaknesses associated with each alternative. The document should use clear, concise writing; an easy-to-use format; effective graphics and visual elements; discussion of issues and impacts in proportion to their significance; and meet all legal requirements in a way that is easy to follow for readers. The EIS should be printed on 8.5 x 11-inch paper with any foldout sheets folded to that size.

The document should include the following sections:

1. [Cover Sheet](#)
2. [Summary](#)
3. [Table of Contents](#)
4. [List of Figures](#)
5. [List of Tables](#)
6. [Purpose of and Need for Action](#)
7. [Alternatives Considered](#)
8. [Environmental Resources, Impacts and Mitigation](#)
9. [Public Comments and Agency Coordination](#)
10. [Section 4\(f\)](#)
11. [Comparison and Selection of Alternatives](#)
12. [List of Preparers](#)
13. [List of Agencies, Organizations, and Persons to Whom Copies of the Statement are Sent](#)
14. [Index](#)
15. [Appendices](#)

### **Cover Sheet**

The cover sheet should not exceed one page and should include the following:

- A list of the lead and cooperating agencies.
- The title of the proposed action that is the subject of the EIS and related cooperating actions (if applicable).
- The project location including state(s), county(ies), and/or municipalities.

- The contact information including name, address, and telephone number of the individual responsible for supplying additional information.
- A designation of the type of EIS Document (DEIS, FEIS, or supplemental EIS).
- A one-paragraph abstract.
- The date by which comments must be received.

1. Summary

This section should provide a synopsis of all key aspects of the EIS including the following:

- Brief description of the proposed project indicating route, termini, type of improvement, number of lanes, length, county, city, state, and other information as appropriate.
- Major actions proposed by other governmental agencies in the vicinity of the project.
- Purpose and need for the project.
- Alternatives that were considered.
- Major environmental impacts.
- Areas of controversy including issues raised by agencies and the public.
- Unresolved issues with other agencies.

2. Table of Contents

The Table of Contents should provide an indexed listing of all denoted major sections of the EIS, together with the corresponding page-number references to the location within the document.

3. List of Figures

The List of Figures should include an indexed listing of all denoted figures included within the text of the EIS, together with the corresponding page-number references to the location within the document.

4. List of Tables

The List of Tables should include an indexed listing of all denoted tables included within the text of the EIS, together with the corresponding page-number references to the location within the document.

5. Purpose and Need for Action

This section should include the final version of the purpose and need statement and a discussion of supporting data. The CEQ recommends that the purpose and need statement be briefly specified, typically in one or two paragraphs. The discussion of data supporting the purpose and need should briefly but adequately describe the transportation problem. See Section [I.C.3a](#) for more information regarding the process of developing the purpose and need for a project.

6. Alternatives Considered

This section should include a discussion of the following:

- Preliminary alternatives developed in the scoping process.
- Methods used for screening alternatives.
- Results of the screening processes.
- Reasons for eliminating any alternatives from consideration.

- Alternatives carried forward for detailed study.
- How the alternatives carried forward achieve the projects purpose and need.

See Section [I.F. Alternatives](#) for more information.

#### 7. Environmental Resources, Impacts, and Mitigation

This section includes a discussion of impacts for each reasonable alternative. This section combines the Affected Environment and Environmental Consequences chapters described in [T6640.8A](#). The information should be presented in a neutral and objective fashion, even if a preferred alternative is identified later in the document. This chapter of the EIS discusses each of the resources discussed in [Section II. Environmental Considerations](#).

Two approaches exist that may be utilized for the format of this section. In the first approach, there are individual sections for each alternative, with subsections that discuss the resources affected by each of the alternatives and proposed mitigation. This method facilitates the comparison of individual alternatives. In the second approach, there are sections for each resource, with individual discussions of the impacts of each alternative upon that resource, as well as mitigation that would be required. This method facilitates review by individuals/agencies interested in specific environmental issues and is advantageous if there are few alternatives or if impacts and mitigation are similar for the alternatives.

Each alternative or resource section should contain the following subsections:

- Introduction – Briefly describe what the alternative or resource is and its importance.
- Existing Conditions – Describe the existing environmental resources (under the do-nothing condition).
- Methodology – Describes the methods used in identifying the resource and evaluating impacts.
- Analysis – Describes the analyses conducted the results, and how they relate to comparison of alternatives. This should examine both the affected existing environment and the impacts of the alternatives.
- Mitigation – Describes potential mitigation strategies. Mitigation must be considered for all impacts, regardless of significance.

When preparing the FEIS, the impacts and mitigation measures of the alternatives, particularly the preferred alternative, may need to be discussed in more detail to elaborate on information provided in the DEIS, firm up commitments, address issues and comments raised in response to the DEIS, and clarify any monitoring and enforcement programs to be implemented with the project throughout later phases. The FEIS should also identify any new impacts resulting from modifications of the project or identification of substantive new circumstances or information regarding the preferred alternative following circulation of the DEIS.

#### 8. Public Comments and Agency Coordination

This section includes a discussion of the public involvement and agency coordination strategies detailed in the public involvement plan and coordination plan, how they were

implemented during the environmental review process, and the results of these activities. The DEIS should summarize early coordination, the EIS scoping process, public and agency meetings, and public and agency correspondence, comments, and responses. Copies of correspondence, comments, and responses should be included in the appendices. The FEIS should contain summaries of substantive comments received for the DEIS and responses provided. Copies of these comments and responses should be included in the appendices.

9. Section 4(f) Evaluations

This section should describe the methodology used to identify properties and impacts. If no Section 4(f) resources are found, then the requirement is satisfied. If resources are found within the study area, a discussion of the resources and any impacts should be included. Section 4(f) evaluations prepared for impacted properties should be included in a standalone Section 4(f) appendix. See [Section II.B.14](#) for more information regarding the recommended format for Section 4(f) evaluations.

10. Comparison and Selection of Alternatives

This section should include an analysis of each of the reasonable alternatives based on the information presented in the preceding chapters regarding the benefits, impacts, advantages, and disadvantages of each. A matrix format is preferred to facilitate comparison and evaluation of alternatives. When a preferred alternative is identified, this section should include the rationale for selecting that alternative.

11. List of Preparers

This section should include a list of the individuals primarily responsible for preparing the EIS and associated technical reports/studies. This list may include federal, state, and local agency personnel, including consultants. The list should provide the name, qualifications, expertise, experience, and professional discipline of each preparer.

12. List of Agencies, Organizations, and Persons to Whom Copies of the EIS are Sent

This section should include the distribution list for the EIS. The distribution lists for a DEIS and FEIS should be developed in accordance with the EIS Document Distribution list provided in Appendix J.

13. Index

This section should include an alphabetic listing of all sections and subsections in the EIS and other references on important subjects and areas of major environmental impacts, together with the corresponding page number references to the text.

14. Appendices

This section should include technical reports and other background material prepared in connection with the EIS that supports information and analyses contained in the main body of the document. The appendices for an FEIS should also contain responses to comments on the DEIS. If the comments are especially voluminous or repetitive, summaries will suffice.

Other reports and studies that are not prepared specifically for the EIS should be incorporated into the document by reference and briefly described. Material incorporated by reference

must be reasonably available for agency and public review within the time allowed for comment.

## References

Joint AASHTO/ACEC Committee (2006) *Improving the Quality of Environmental Documents* November 2008 [http://environment.transportation.org/pdf/IQED-1\\_for\\_CEE.pdf](http://environment.transportation.org/pdf/IQED-1_for_CEE.pdf)

AASHTO (2006) *Practitioner's Handbook, Tracking Compliance with Environmental Commitments/Use of Environmental Monitors* November 2008  
<http://www.environment.transportation.org/pdf/PG04.pdf>

AASHTO (2006) *Practitioner's Handbook, Responding to Comments on an Environmental Impact Statement* November 2008 <http://www.environment.transportation.org/pdf/PG02.pdf>

FHWA/FTA (2003) *FHWA/FTA Interim Guidance on Purpose and Need* November 2008  
<http://www.environment.fhwa.dot.gov/guidebook/Ginterim.asp>

FHWA/FTA (2003) *FHWA/FTA Joint Guidance on Purpose and Need* November 2008  
<http://www.environment.fhwa.dot.gov/guidebook/Gjoint.asp>

FHWA/FTA (2005) *Linking the Transportation Planning and National Environmental Policy Act (NEPA) Processes* November 2008 <http://www.fhwa.dot.gov/hep/plannepa050222.pdf>

FHWA/FTA (2006) *SAFETEA-LU Environmental Review Process Final Guidance* November 2008 <http://www.fhwa.dot.gov/hep/section6002/section6002.pdf>

INDOT (2007) *Indiana Categorical Exclusion Manual* November 2008  
<http://www.in.gov/indot/3295.htm>

FHWA (1987) *Technical Advisory T 6640.8A: Guidance for Preparing and Processing Environmental and Section 4(f) Documents* November 2008  
[http://nepa.fhwa.dot.gov/ReNepa/ReNepa.nsf/aa5aec9f63be385c852568cc0055ea16/6c083b3d1e9d0bf985256934006e3fe3/\\$FILE/FHWA%20Technical%20Advisory%20T6640\\_8a.htm](http://nepa.fhwa.dot.gov/ReNepa/ReNepa.nsf/aa5aec9f63be385c852568cc0055ea16/6c083b3d1e9d0bf985256934006e3fe3/$FILE/FHWA%20Technical%20Advisory%20T6640_8a.htm)

FHWA/INDOT (2007) *Streamlined Environmental Impact Statement (EIS) Procedures* November 2008 <http://www.in.gov/indot/6716.htm>

FHWA *Examples of SAFETEA-LU Environmental Review Process Implementation* November 2008 [http://environment.fhwa.dot.gov/strmlng/safe\\_implement.asp#proj](http://environment.fhwa.dot.gov/strmlng/safe_implement.asp#proj)

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## I.C.4 Administrative Record

The administrative record provides evidence that the agency's decision was derived in accordance with National Environmental Policy Act (NEPA) and is in compliance with other requirements such as the Administrative Procedures Act ([5 USC 552](#)). The administrative record consists of the NEPA documents (Environmental Assessment (EA), Finding of No Significant Impact (FONSI), Draft and Final Environmental Impact Statement (DEIS, FEIS), and Record of Decision (ROD) and the background documentation that supports or is referenced in the NEPA documents, such as public hearing transcripts and technical reports. The record includes written correspondence, printed copies of e-mails, meeting minutes, and references to information that support the facts and decisions specific to the NEPA process, such as purpose and need, alternatives development, impact analysis, public involvement and interagency coordination.

A good administrative record should fully reflect how and why the agency reached its decision. In developing the administrative record, information that contributes to evidence of the deliberative process should be included. Documentation of contrary opinions or conflicting data and the resolution of the same are critical. When the relevance of the information to the project decision is limited, or can otherwise be represented by other items in the administrative record, exclusion of this information is reasonable.

Because the administrative record for an EIS can become voluminous and is by nature generated by many different people, at a variety of locations, and over a considerable amount of time, a project-specific plan for managing the administrative record is necessary. INDOT and the Federal Highway Administration (FHWA) should review and approve the administrative record plan very early in the EIS development process. The administrative record should be assessed periodically throughout the project development process for completeness and adequacy. Legal counsel should be consulted to assist in preparation and maintenance of a defensible administrative record.

### References

AASHTO (2006) *Practitioner's Handbook: Maintaining a Project File and Preparing an Administrative Record for a NEPA Study* October 2007

<http://www.environment.transportation.org/pdf/PG01.pdf>

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## I.D. Purpose and Need

### Background

All environmental studies require a purpose and need statement, which outlines the problem(s) of a transportation facility and the goal(s) for that facility. The purpose and need section cannot describe the recommended alternative. A purpose and need must conclusively illustrate that the corrective effort is justifiable and worth the expenditure of public funds. It also provides the basis for developing a range of reasonable alternatives and ultimately the identification of the

preferred alternative. Further, it demonstrates the problems that will result with selection of the no-build alternative.

The “Purpose” defines the goals and objectives that should be included as part of a successful solution to the problem. It is a broad statement of the primary intended transportation result and other related objectives and supported by the identified needs. The purpose is not the scope of work but the goals of the project (improve traffic flow, improve safety concerns, maintain driving surface, etc.) The “Need” is a detailed explanation of the specific transportation problems or deficiencies that exist, or that are expected to exist in the future. Each need for action should enable decision-makers to evaluate alternatives by providing measurable objectives or specifications.

The requirement for purpose and need statements began with the National Environmental Policy Act (NEPA), which requires all federal agencies to consider impacts of their actions on the environment. The Council on Environmental Quality (CEQ) regulations requires that an environmental document include a purpose and need statement (40 CFR 1502.13). The Federal Highway Administration’s (FHWA) Technical Advisory (TA) T6640.8A directs state DOTs to identify and describe the proposed action and problems or needs it intend to address. A purpose and need statement is required in all environmental studies, including Environmental Impact Statements (EIS), Environmental Assessments (EA), Categorical Exclusions (CE), corridor studies, and Environmental Studies (ES).

SAFETEA-LU does not substantively change the concept of purpose and need established by the CEQ regulations. SAFETEA-LU requires a clear statement of identified objectives that the proposed project is intended to achieve for improving transportation conditions. The objectives are derived from needs and may include, but are not limited to, the following outlined in SAFETEA-LU:

- Achieving a transportation objective identified in an applicable statewide or metropolitan transportation plan; (transportation objectives)
- Supporting land use, economic development, or growth objectives established in applicable federal, State, local, or tribal plans; (land use/economic growth objectives)
- Serving national defense, national security, or other national objectives, as established in federal laws, plans, or policies. (defense, national security or other national objectives)

Although many transportation studies have established these listed or similar objectives in the past, SAFETEA-LU affirms the use of these objectives in establishing the purpose and need for a transportation project. For example, the statement of objectives might include goals and objectives obtained from federal, State, or local planning documents that describe land use, growth, or other targets or limits.

### **Process**

The purpose and need assists in the development of a reasonable range of alternatives and the criteria used for selection between alternatives. In order to identify and describe the transportation problem(s) or other needs, it is necessary to include an adequate level of detail depending on the scope of the project. The purpose and need should be concise and can include

the identification of current needs, current capacity, future demand, safety issues, roadway deficiencies, system linkage and legislative directive.

Common concerns of the purpose and need are narrowly defining the project purpose and need; project goals that are too vague or broad; omitting local agencies' policies and goals established in transportation, land use, and other relevant planning studies.

The following is a sample structure for a purpose and need statement:

- Background – a short discussion of the location and existing facility.
- Purpose – a very clear, concise description of the primary goals the project is expected to attain.
- Need – a description of the problems or unsatisfactory conditions that currently exist or are expected with the existing facility or project area.
- Other goals/objectives – a description of desired outcomes that are not central to the P&N but are nonetheless important considerations.

General direction on developing concise and understandable purpose and need statements is found in the CEQ/USDOT letter exchange found online at [FHWA-FTA Interim Guidance on Purpose and Need](#) and in [FHWA-FTA Joint Guidance on Purpose and Need](#) issued July 23, 2003.

### **Related CE/EA Form Section**

Purpose and Need are discussed in Part II, General Project Identification, Description, and Design Information (Purpose and Need for the Project).

### **References**

FHWA (2005) *Linking the Transportation Planning and National Environmental Policy Act (NEPA) Processes* November 2008 <http://www.fhwa.dot.gov/hep/plannepa050222.pdf>

FHWA/FTA (2003) *Interim Guidance on Purpose and Need*, November 2008  
<http://www.environment.fhwa.dot.gov/guidebook/Ginterim.asp>

FHWA-FTA (2003) *Joint Guidance on Purpose and Need*, November 2008.  
<http://www.environment.fhwa.dot.gov/guidebook/Gjoint.asp>

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## **I.E. Red Flag Investigations**

### **Background**

During the initial planning and development of the environmental document an investigation should be conducted to determine areas of concern (red flags) within the project study area. The purpose of the red flag investigation is to screen the project area for potential environmental, constructability, and engineering issues or concerns. Conducting a red flag investigation early in the process allows the preparer to more closely examine areas or items of concern that might be impacted as a result of the proposed action and discard alternatives which contain fatal flaws before devoting time and resources to their development.

### **Process**

For projects where INDOT is preparing the environmental document in-house, the Red Flag Investigation (RFI) will be conducted by the Hazardous Materials Unit in the Office of Environmental Services (OES). The request should consist of a project description, a map of the project location and any additional relevant information. For other projects, the red flag investigation should be submitted to the Hazardous Materials Unit for review and approval. For every red flag item found, an appropriate specialist at OES should be consulted to determine the level of concern for each item.

For LPA projects, submittal of the red flag investigation in advance of the environmental document is optional. If the LPA or its representative elects not to submit the RFI for review early, it should be included as an attachment to the environmental document.

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## **I.F. Alternatives**

### **Background**

The identification, consideration and analysis of alternatives are vital to the National Environmental Policy Act (NEPA) process. The consideration of a range of alternatives helps to produce a solution that satisfies the purpose and need for the project while protecting environmental and community resources.

There are three basic categories of alternatives that can be developed for each project:

1. The Do Nothing alternative: includes short term minor maintenance activities that maintain continuing operation of the existing roadway(s) and all other committed projects within the network (such as adjacent roads).
2. Build alternatives: include construction on an existing facility or construction of a new facility.
3. Transportation System Management (TSM)/Travel Demand Management (TDM) alternatives: include activities which maximize the efficiency of the present transportation system by focusing on changing its operation and travel behavior or focus on changing travel behavior – trip rates, length, travel mode, time-of-day, etc.

The do nothing alternative must always be considered ([40 CFR 1502.14\(d\)](#)) and carried through the NEPA process for comparison purposes. In many evaluations the do nothing alternative is listed as having no cost, which is generally not accurate. Issues such as loss of time due to congestion, economic loss due to accidents or inability to get customers to markets and/or increased maintenance, etc., should be considered as part of the cost of “doing nothing”, if the proposed project would alleviate that cost.

The Federal Highway Administration (FHWA) recommends the consideration of Transportation System Management (TSM)/Travel Demand Management (TDM) alternatives as potential design options when evaluating the range of alternatives. TSM/TDM alternatives include activities which maximize the efficiency of the present transportation system by focusing on changing its operation and travel behavior. Typically these projects focus on improving traffic flow and reducing traveler delay. Park and ride facilities, shifting/separating freight movements or bicycle/pedestrian facilities are examples of TSM/TDM alternatives. TDM strategies focus on changing travel behavior (trip rates, trip length, travel mode, time-of-day, etc). TSM/TDM alternatives are usually practical only for major projects proposed in urbanized areas.

HOV lanes and mass transit should be considered for all major projects in urbanized areas with populations over 200,000. Mass transit alternatives include those reasonable and feasible transit options (bus systems, rail, etc.) even though they may not be within the existing FHWA funding authority. Consideration of mass transit may be accomplished by reference to the regional or area transportation plan or an independent analysis during early project development.

Where urban projects are multi-modal and are proposed for federal funding, close coordination is necessary with the Federal Transit Administration (FTA). In these situations, the FTA should be consulted early in the project development process. Where FTA funds are likely to be requested for portions of the proposal, the FTA must be requested to either be a joint lead agency or a cooperating agency at the earliest stages of project development. Where applicable, cost-effectiveness studies that have been performed should be summarized in the EIS.

If a project has the potential to impact certain resources, such as wetlands, Section 4(f) properties, or threatened and endangered species, then avoidance, minimization and mitigation alternatives may be required by regulations applicable to these resources. In addition, if the preferred alternative will affect such resources, adequate justification must be provided to explain why avoidance alternatives were not selected, in accordance with the regulations applicable to the resource(s) involved.

The range of alternatives considered must include a representative sample of all reasonable alternatives, which must be rigorously explored and objectively evaluated ([40 CFR 1502.14](#)). A reasonable alternative, as outlined in [23 CFR 771.111\(f\)](#), must:

- Have logical termini: rational end points for the transportation project and study area.
- Have independent utility: the project must be able to function on its own, without further construction.
- Not restrict the consideration of future transportation alternatives: a reasonable alternative cannot be used as justification for other projects, nor can it be used to predetermine or restrict future projects.

A representative sample of all alternatives meeting the purpose and need that can reasonably be constructed, regardless of cost, must be evaluated. Cost may be one of the factors for eliminating an alternative but it cannot be the only factor unless it is the only factor that differentiates two alternatives with the same or similar impacts and that meet the purpose and need. For projects with a large number of reasonable alternatives, a representative number of these alternatives must be presented and evaluated in detail ([40 CFR 1502.14\(a\)](#)).

If an alternative does not satisfy the purpose and need for the project, as a rule, it should not be included in the analysis as an apparent reasonable alternative, except for the do nothing alternative. There are times when an alternative that is not reasonable is included based on the request of another agency or due to public expectation. In such cases, it should be clearly explained why the alternative is not reasonable (or prudent or practicable), why it is being analyzed in detail and, that because it is not reasonable, it will not be selected.

### **Process**

The alternative analysis should give a clear indication of the process used to develop the range of alternatives and how the preferred alternative was selected. Each alternative considered should be described in sufficient detail to provide termini, location, costs and impacts for comparison to the preferred alternative and the do nothing alternative. Any maps, aerial photographs, or drawings of the alternatives should be included in the appendix of the environmental document.

If there are substantial differences in the levels of information available for the alternatives, it may be necessary to apply reasonable assumptions about impacts or mitigation to make a fair comparison. Some common concerns related to the evaluation of alternatives include:

- Failing to explain the alternative development.
- Failing to explain the screening and evaluation process adequately.
- Eliminating alternatives based on generalities without adequate or appropriate analysis to support the decision.
- Eliminating alternatives based on outdated information.
- Failing to reconsider alternative screening decisions later in the project development process when new information becomes available.
- Over-reliance on weighting and scoring techniques.

For information on how to develop alternatives for environmental impact statement, please see section [I.C.3a Preparation of Federal Environmental Impact Statements](#).

### **Related CE/EA Form Section**

Alternatives are discussed in Part II, Project Description (Preferred Alternative) and Part II, Other Alternatives Considered.

### **References**

FHWA *NEPA and Transportation Decisionmaking, Development and Evaluation of Alternatives* November 2008 <http://environment.fhwa.dot.gov/projdev/tdmalts.asp>

FHWA (1999) *Development and Evaluation of Alternatives* November 2008  
<http://www.fhwa.dot.gov/environment/alts.htm>

CEQ *NEPA's 40 Most Asked Questions* November 2008  
<http://www.nepa.gov/nepa/regs/40/40p3.htm>

FHWA (1993) *NEPA and Transportation Decisionmaking, Development of Logical Project Termini* November 2008 <http://www.environment.fhwa.dot.gov/projdev/tdmtermini.asp>

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## I.G. Public Involvement

### Background

INDOT defines public involvement as two-way communication aimed at providing information to the public and incorporating the views, concerns, and issues of the public in the transportation decision-making process. It is the policy of INDOT to promote public involvement opportunities and information exchange activities throughout the planning, designing, construction, operations, and maintenance of transportation projects. The *INDOT Public Involvement Procedures* provide opportunities for early and continuing involvement of the public in developing transportation plans, programs, and projects and provides complete public information, timely public notice, and public access to key decisions. In keeping with the Americans with Disabilities Act, meetings must be held in locations that are accessible to people who have disabilities. In keeping with the Title VI of the Civil Rights Act and the Executive and DOT Orders and the Federal Highway Administration (FHWA) Guidance on Environmental Justice, the department will proactively reach out to and solicit input from low-income and/or minority communities.

As decisions are made on transportation projects, INDOT must consider input from the following sources:

- Local government.
- Resources agencies.
- The public at large.
- Internal assessments of transportation needs, cost, funding availability, and engineering constraints.

### Process

The following describes the public involvement activities that are undertaken during the Project Development Process and identifies which of these activities are required for projects that are classified as a Categorical Exclusion (CE), an Environmental Assessment (EA) or an Environmental Impact Statement (EIS). If no class of document is referenced, then a particular activity may be used for any type of project as needed. For a more detailed description of each step in the process, refer to the *INDOT Public Involvement Manual*.

### Preparation of a Public Involvement Plan

A Public Involvement Plan (PIP) is a project-specific plan to involve the public in the development of projects which may affect them. It identifies the potentially affected members of the public and the techniques that will be used to inform them and elicit input. The purpose of the PIP is to ensure that an appropriate level of public involvement is conducted, commensurate with the nature of the project. The PIP may be short and simple for routine projects (such as road resurfacing) or may be detailed and extensive for complex or large-scale projects (such as projects that involve significant potential social, economic, or environmental impacts or are known to be controversial). The PIP is written by the Hearings Manager and/or Project Manager.

### Public Notices of proposed action or projects

The INDOT Public Hearings Section publishes a variety of notices in local newspapers and may also distribute these notices to one or more mailing lists maintained by the Office of Public Hearings, depending on the type of notice. The goal of these notices is to inform the public of specific actions or information related to transportation projects. For information on how to complete a Public Notice see Appendix Z. Depending on the class of NEPA documentation and type of impacts, the notices may include:

1. Notice of Intent to Initiate an Environmental Impact Statement (NOI) (applicable to and required for EISs only): This is published by the FHWA in the Federal Register and serves as the official start of an EIS.
2. Notice Soliciting Comments on Historic Impacts (Section 106 of the National Historic Preservation Act): Per the [INDOT Cultural Resources Manual](#) and the [Programmatic Agreement regarding the Federal Aid Highway Program in Indiana](#) (Minor Projects PA): Section 106 public notices are required for all projects other than those listed in Appendices A and B of the Minor Projects PA.
3. Notice Soliciting Comments on 4(f) Findings (Section 4(f) of the DOT Act): Certain types of impacts to properties protected by Section 4(f) of the DOT Act require notification to the public. Refer to [Section II.B.14](#) for more specific information.
4. Notice of Planned Improvement (required for CEs and EAs that meet the conditions which trigger the offer of a public hearing): This advises the public that a project is planned in the area and requests comments on its scope and timing.
5. Notice of Proposed Design and Noise Study Information Meeting: If a hearing was conducted during the NEPA phase (unless the only reason for conducting a hearing was demolition of a non-select bridge), then another hearing must be conducted in the design phase. This is an opportunity to present more detailed design information and, if applicable, proposed noise abatement.
6. Notice Issued when a Finding of No Significant Impacts (FONSI) is Issued (required for EAs): Following the public comment period for the EA and project decision by the FHWA, a one-page notice of the FONSI is issued by INDOT on behalf of the FHWA.
7. Notice Issued when the Final Environmental Impact Statement is Completed (required for EISs): This notice is an announcement that the FEIS is approved and available for viewing at public repositories, such as libraries, public offices, and appropriate INDOT District

Office(s) and on the INDOT website. The notice should be mailed to the project mailing list and published in local newspapers, and it should indicate the method by which comments may be submitted.

8. Notice of Public Hearing: including announcement of the availability of the environmental document (required for EISs).
9. Notice Issued when a Record of Decision (ROD) is Issued (required for EISs): Following the FEIS and a project decision by the FHWA, a one-page notice of the ROD is issued by INDOT on behalf of the FHWA. This notice is sent to the project mailing list and published in local newspapers.
10. FHWA Statute of Limitation Notice: This is a notice published in the Federal Register stating that a NEPA decision has been made and that any lawsuits must be brought within 180 days. A determination as to whether this is appropriate will be made by FHWA and INDOT on a project-by-project basis.
11. Notice of Additional Information (AI) to an Approved Environmental Document. INDOT will consult with the FHWA regarding the scope of the Additional Information and the need for public notice for EISs, EAs, and FHWA approved CEs.
12. Notice of Section 4(f) *de minimis* Finding: This notice is published to inform the public of a *de minimis* use of a park, refuge or public recreational area under Section 4(f).

In some cases the notices described above may be combined and serve multiple functions. For instance the “Notice of Public Hearing” issued for an EIS project may serve as the (1) notice of the hearing, (2) notice of the availability of the DEIS, and (3) the means to solicit comments on historic impacts, as required in Section 106 of the National Historic Preservation Act.

#### Community Advisory Committees

A Community Advisory Committee (CAC) is a group of representatives of various community organizations (public and private) that are convened by INDOT, or its agents, at the outset of the NEPA process. CACs are required on all EIS-level projects and are considered on EA projects based on public interest or potential for controversy. The CAC holds periodic meetings throughout the NEPA process to discuss issues and concerns related to the proposed project. CACs are especially helpful in the development of Context Sensitive Solutions.

#### Public Information Meetings

Public information meetings are meetings where the public may hear and obtain information about a proposed project, raise questions, and talk with project staff about their needs, concerns, and ideas. Public Information Meetings are always conducted for EIS projects (at the Purpose & Need/Conceptual Solutions and Preliminary Alternatives Screening stages), and are frequently used for Environmental Assessments as well. Categorical Exclusions only require public information meetings to address particular resource issues, such as noise impacts or effects on historic properties, or if a need is identified by the FHWA or INDOT to address areas of concern or controversy.

#### Notice of Survey

INDOT sends a letter to individual property owners to notify them when INDOT personnel (or consultants on behalf of INDOT) will be present on their property to gather data that is needed

for environmental or engineering analysis. A notice of survey is issued for any project that requires work on private property and must be sent to property owners no later than 5 days before the date of entry. For a Sample Notice of Survey Letter see Appendix O. Note that a Notice of Survey should be reissued if fieldwork is needed and the previous Notice of Survey is more than six months old. If the list of property owners is greater than two years old then it should be updated at this time.

### Public Hearings

A public hearing is a meeting held at a convenient time and place at which the public can learn about a proposed INDOT project and make comments which will be included in a transcript of the meeting. For EIS level projects, a public hearing is required after publication of the Draft EIS, prior to preparation of the Final EIS. For EAs, a public hearing is conducted after the EA has been approved, but prior to the FHWA finding of no significant impact (FONSI). A transcript of the hearing is then prepared, including a disposition of comments, to be included in the request for the FHWA to issue a FONSI. Per the Programmatic Agreement Regarding Management and Preservation of Indiana's Historic Bridges ([Historic Bridges PA](#)), owners of historic bridges will hold a public hearing prior to completion of NEPA.

For CEs which do not involve historic bridges, INDOT offers the opportunity to request a public hearing, typically during the design phase, when the project meets specific conditions established by INDOT's Office of Public Hearings in their [Public Involvement Manual](#) (<http://www.in.gov/indot/files/PubInvPoliciesProcedures.pdf>). Among these, the most common trigger for a hearing is acquisition of significant amounts of right-of-way (currently defined as half an acre or greater). In addition, INDOT or FHWA may determine that a hearing is in the public interest if significant social, economic, environmental effects are anticipated as a result of the project. These may include such concerns as floodplain encroachments requiring a permit, permanent changes to access or alignment, or significant (greater than one acre) impacts to wetlands.

If a project results in the increase of right-of-way due to the following factors and does not require more than 0.5 acre of total permanent right-of-way, it would be exempt from the public hearing requirement for CEs :

1. The proposal involves reacquiring acre or less of past prescriptions (i.e. existing or apparent existing right-of-way).
2. The proposal involves the acquisition of donated right-of-way from property owner.
3. Acquiring right-of-way presently within INDOT apparent right-of-way to establish legal documented ownership.
4. Additional right-of-way needed for mitigation purposes, for projects where original right-of-way impacts as described in the environmental document were less than 0.5 acre.

### Solicitation of Views related to Noise Impacts and Noise Abatement Measures

Starting in NEPA and continuing through final design for projects that involve noise impacts to residents and businesses, a special effort is made to solicit the views of residents and businesses that may benefit from noise abatement. This public input helps INDOT select noise abatement measures and explore specific design strategies, like noise barriers. Noise abatement triggers a need for two public information meetings. The first is conducted during the design phase, to gauge public interest in or opposition to abatement at proposed locations. The second hearing is

held after the contract is awarded so that the public can provide input on items such as color and texture for walls that have been approved for construction.

Notice of Impacts to Historic Properties and Solicitation of Public Views under Section 106 of the National Historic Preservation Act

INDOT consults with the public to identify historic properties potentially affected by the undertaking; assess the effects of the transportation project on these properties; and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. Interest groups like local historical societies are also given an opportunity to comment. This is done through early coordination with interested groups, as well as through legal notices notifying the public of a Finding of Effect. For a Sample Early Coordination Letter see Appendix P.

**Related CE/EA Form Section**

Public Involvement is discussed in Part I, Public Involvement.

**References**

INDOT (Draft 2007) *Public Involvement Manual* November 2008

<http://www.in.gov/indot/6606.htm>

INDOT/FHWA (1997) *Indiana Department of Transportation Public Involvement Procedures*

November 2008 <http://www.fhwa.dot.gov/indiv/pinvproc.htm>

FHWA (1996) *Public Involvement Techniques for Transportation Decision-making* November

2008 <http://www.fhwa.dot.gov/reports/pittd/cover.htm>

INDOT (2006) *Local Hearings Process for Federal-Aid Projects* November 2008

<http://www.in.gov/indot/6606.htm>

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## I.H. Early Coordination with Resource Agencies

### Background

Early coordination is required under [23 CFR 771.111](#). It is a request to resource agencies to provide information concerning anticipated impacts of proposed projects. Its goal is to give resource agencies an opportunity to comment on a project's anticipated impacts early in the process and identify potential pitfalls or fatal flaws in a project or alternative before significant resources have been committed. If carried out conscientiously it can reduce uncertainty in permitting and other agency approvals late in the development process, when delays are especially costly.

### Process

The Early Coordination Letter (ECL) should include the following, as appropriate to the scope and scale of the project:

1. Existing conditions, including:
  - a. Identified deficiencies
  - b. Alignment and any proposed structures
  - c. Right-of-way
  - d. Current surrounding land use
2. Draft Purpose and Need
3. Proposed vertical and horizontal alignment changes
4. Anticipated number of lanes and widths
5. Proposed right-of-way
  - a. Designation as permanent and/or temporary
  - b. Width and total acreage
  - c. Justification for need
6. Expected in-stream work and channel changes
7. Changes to access control
8. Known/anticipated environmental impacts and planned mitigation
9. Project process and schedule

See Appendix N for an example ECL. Attachments to the ECL should include relevant graphics for the project area. The location of the project should be shown on a US Geological Survey (USGS) quadrangle map as well as a state map, and aerial photos or plan sheets should be attached with proposed project limits, existing and proposed alignments (with Right-of-Way shown), and locations of any potential areas of concern. Photographs of the existing roadway in all directions, all quadrants at any bridges, and upstream and downstream of all streams crossed should be included, particularly in the U.S. Fish and Wildlife (USFWS) and Indiana Department of Natural Resources (DNR) coordination packets. The ECL should also include a statement that responses must be received within 30 days to be considered timely.

**Agencies to Be Contacted As Part of Early Coordination Efforts for All Projects:**

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Field Supervisor U.S. Fish and Wildlife Service Bloomington Field Office 620 South Walker Street Bloomington, Indiana 47403-2121	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Photos</li> <li>3. Graphics</li> </ol>	<ol style="list-style-type: none"> <li>1. "No Effect",</li> <li>2. "Not Likely to Adversely effect",</li> <li>3. "Likely to Adversely effect"</li> </ol>
State Conservationist Natural Resource Conservation Service 6013 Lakeside Boulevard Indianapolis, Indiana 46278	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Photos</li> <li>3. Graphics</li> <li>4. Partially completed CPA-106 form (Appendix V)</li> </ol>	CPA-106 form with Section V completed
Section Head Environmental Geology Section Indiana Geological Survey 611 North Walnut Grove Bloomington, Indiana 47405	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Questionnaire (Appendix R)</li> <li>3. Graphics</li> </ol>	Questionnaire completed
Manager Aviation Section Indiana Department of Transportation Room N901, IGC North 100 North Senate Avenue Indianapolis, Indiana 46204	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Questionnaire (Appendix Q)</li> <li>3. Graphics</li> </ol>	Questionnaire completed
Regional Environmental Coordinator Midwest Regional Office National Park Service 601 Riverfront Drive Omaha, Nebraska 68102	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> </ol>	Questionnaire completed
Federal Highway Administration Federal Office Building Room 254 575 North Pennsylvania Street Indianapolis, Indiana 46204	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> </ol>	No response

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Environmental Coordinator Indiana Department of Natural Resources Division of Fish and Wildlife Room W264, IGC South 402 West Washington Street Indianapolis, Indiana 46204	<ol style="list-style-type: none"> <li>1. 2 Early coordination letters</li> <li>2. 2 Sets of photos</li> <li>3. 2 Sets of graphics</li> </ol>	Letter stating possible permits and mitigation
Regional Environmental Officer Chicago Regional Office, US Department of Housing & Urban Development Metcalfe Fed. Bldg. 77 W. Jackson Blvd. Rm 2401 Chicago, IL 60604	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> </ol>	Response letter
Indiana Department of Environmental Management <i>Automatic Coordination Website:</i> <a href="http://www.in.gov/idem/enviroreview/hwy_earlyenviroreview.html">http://www.in.gov/idem/enviroreview/hwy_earlyenviroreview.html</a>	<ol style="list-style-type: none"> <li>1. Short project description on website submission</li> </ol>	Response letter will appear immediately after web submission
Chief, Groundwater Section Indiana Department of Environmental Management 100 N. Senate Avenue Indianapolis, IN 46204	<ol style="list-style-type: none"> <li>1. Wellhead Protection Proximity Request Form  <a href="http://www.in.gov/idem/files/wellhead_proxform.pdf">http://www.in.gov/idem/files/wellhead_proxform.pdf</a> </li> </ol>	Wellhead Protection Proximity Determination

If the project is in the following northern counties, then the northern USFWS office should be contacted as well, at the address listed below.

- Allen,
- Dekalb
- Elkhart
- Fulton
- Jasper
- Kosciusko
- LaGrange
- Lake
- LaPorte
- Marshall
- Newton
- Noble
- Porter
- Pulaski
- St. Joseph
- Starke
- Steuben
- Whitley

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
U. S. Fish and Wildlife Service P.O. Box 2616 Chesterton, IN 46304	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Photos</li> <li>3. Graphics</li> </ol>	<ol style="list-style-type: none"> <li>1. “No Effect”,</li> <li>2. “Not Likely to Adversely effect”,</li> <li>3. “Likely to Adversely effect”</li> </ol>

If the project is located in the southern portion of the state, contact US Forest Service at:

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Forest Supervisor Wayne-Hoosier National Forest US Forest Service 811 Constitution Avenue Bedford, Indiana 47421	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Questionnaire (Appendix S)</li> <li>3. Graphics</li> </ol>	Response letter

If the project will directly affect the shoreline of Lake Michigan, contact the National Oceanic and Atmospheric Administration Office of Program Planning and Integration at:

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
NOAA NEPA Coordinator Program Planning & Integration 1315 East-West Highway, Room 15603 Silver Spring, MD 20910	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> </ol>	Response letter

If the project is anticipated to be an EIS, or to affect a Superfund site, contact US Environmental Protection Agency (USEPA) at:

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Chief, NEPA Review Section US Environmental Protection Agency, Region V 77 West Jackson Boulevard (B-19J) Chicago, Illinois 60604	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> </ol>	Response letter

If a project involves a sole source aquifer (see map of sole source aquifer boundaries in Appendix II), contact USEPA at:

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Sole Source Aquifer Coordinator Ground Water and Drinking Water Branch USEPA, Region 5 77 West Jackson Boulevard, WG-15J Chicago, Illinois 60604	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> </ol>	Response letter

If the project involves the crossing of a stream, contact the appropriate Corps of Engineers District Office(s), as determined by the project location (see map of Corps of Engineers Districts in Appendix L):

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Chief, Environmental Analysis Branch Department of the Army Detroit District, Corps of Engineers ATTN: CENCE-PD-EA PO Box 1027 Detroit, Michigan 48231-1027	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> <li>3. Photos</li> </ol>	Response letter
Chief, Environmental Resources Department of the Army Louisville District, Corps of Engineers ATTN: CEPMP-P-E PO Box 59 Louisville, Kentucky 40201-0059	<ol style="list-style-type: none"> <li>1. Early coordination letter</li> <li>2. Graphics</li> <li>3. Photos</li> </ol>	Response letter

If the project involves one of the following waterways, contact the appropriate Coast Guard District Office. Projects north of the 41<sup>st</sup> parallel are covered by the Ninth Coast Guard District. All others are covered by the Eighth District (see map in Appendix M):

- Miami River (Great) from mile 0.5 to 1.5 miles.
- Indian Creek from mile 0.0 to mile 4.8.
- Ohio River in its entirety.
- Wabash River from mile 441.9.
- Junction of the East and West Forks of the White River from mile 51.6.
- Crooked Creek from mile 7.7.
- Little Blue River from mile 17.6.
- Anderson River from mile 6.0.
- McFadden Creek from mile 2.3.
- Pigeon Creek from mile 5.9.
- Little Oil Creek from mile 4.4
- Little River from mile 20.2
- Patoka River from mile 8.0.

ADDRESS	INFORMATION TO BE SENT	TYPICAL RESPONSE
Chief, Bridge Program Section Ninth Coast Guard District 1055 E. Ninth Street Cleveland, OH 44114-1092	1. Early coordination letter 2. Questionnaire (Appendix T) 3. Graphics	Questionnaire completed
Chief, Bridge Program Section Eighth Coast Guard District 1222 Spruce Street St. Louis, Missouri 63103-2832	1. Early coordination letter 2. Questionnaire (Appendix T) 3. Graphic	Questionnaire completed

If the project is located should be contacted, and any known local organization, (Metropolitan Planning Organizations (MPOs), county highway department, historical societies, etc.) with a specific interest in the project's development should be included.

If the project involves Section 4(f) lands, the agency having jurisdiction over the Section 4(f) land should be contacted. When appropriate, the National Park Service, the U.S. Department of Housing and Urban Development, and the State Conservationist of the U.S. Department of Agriculture (USDA) should be contacted at the addresses previously shown.

For projects sponsored by Local Public Agencies the appropriate INDOT District Office contact should also receive early coordination and graphics (see map of INDOT districts): within a corporation limit, the mayor and town/city council.

Environmental Scoping Manager  
Indiana Department of Transportation  
Crawfordsville District  
P.O. Box 667  
Crawfordsville, Indiana 47933

Environmental Scoping Manager  
Indiana Department of Transportation  
Fort Wayne District  
5333 Hatfield Road  
Fort Wayne, Indiana 46808

Environmental Scoping Manager  
Indiana Department of Transportation  
LaPorte District  
P.O. Box 429  
LaPorte, Indiana 46350

Environmental Scoping Manager  
Indiana Department of Transportation  
185 Agrico Lane  
Seymour, IN 47274

Environmental Scoping Manager  
Indiana Department of Transportation  
Greenfield District  
32 S Broadway St.  
Greenfield, IN 46140-2247

Environmental Scoping Manager  
Indiana Department of Transportation  
INDOT Vincennes District  
3536 US 41 South  
Vincennes, IN 47591

#### Section 106 Consulting Parties to be Contacted

At the same time as Early Coordination Letters are being issued, invitations to Section 106 Consulting Parties should be initiated. The Section 106 Early Coordination Letter should include sufficient supporting documentation to show the potential for impacts to historic properties. Consulting Parties should always include the following agencies:

- INDOT
- The project sponsor (if not INDOT)
- Other local government representatives
- County Historian
- County/City/Regional/Local Historical Societies

- Historic Landmarks Foundation of Indiana (HLFI)
- Members of the public with a demonstrated legal, economic, or preservation interest (including owners of affected historic properties).
- The State Historic Preservation Officer:

Division of Historic Preservation and Archaeology  
402 West Washington Street  
Room W274  
Indianapolis, Indiana 46204

If a finding of adverse effect is anticipated, then the Federal Highway Administration should be included among the consulting parties. If a new roadway across previously undeveloped terrain is proposed, then Native American tribes with an ancestral interest (religious/cultural) in the project area should be included in early coordination. Coordination with Tribes is also required for all Environmental Impact Statements (EIS), regardless of whether a new alignment is under consideration. Because of the nation-to-nation relationship between the federal government and tribal governments, FHWA will take the lead in identifying and establishing consultation with the Indian tribes and Tribal Historic Preservation Officers (THPO) consistent with 36 CFR § 800.3(c) - (f). If the tribe is agreeable, further consultation may be conducted among the tribe and INDOT.

If a historic properties report (HPR) or archaeological report are not yet available when early coordination is issued, the letter to the Division of Historic Preservation and Archaeology should include a note that the HPR or archaeological report will be forthcoming. For more information regarding the content of the Early Coordination Letter to consulting parties, refer to the [\*INDOT Cultural Resources Manual\*](#).

A copy of all Early Coordination materials should be attached as an appendix to the Environmental Document. A sample copy of the ECL, a copy of all supporting materials, and a copy of all completed questionnaires/surveys should be included.

### References

Council on Environmental Quality (2002) *Memorandum to Heads of Federal Agencies - Subject: Cooperating Agencies in Implementing the Procedural Requirements of the National Environmental Policy Act* November 2008

<http://ceq.hss.doe.gov/Nepa/regs/cooperating/cooperatingagenciesmemorandum.html>

FHWA *NEPA and Transportation Decisionmaking: Interagency Coordination* November 2008

<http://www.environment.fhwa.dot.gov/projdev/tdminterag2.asp>

INDOT/FHWA (2007) *Streamlined Environmental Impact Statement Procedures* November 2008

<http://www.in.gov/indot/6716.htm>

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## *II. Environmental Considerations*

### II.A Introduction

The following section will cover the most common types of impacts encountered by highway projects and how each should be addressed in the environmental document. The National Environmental Policy Act (NEPA) requires consideration of the project's context and quantification of its potential impacts as part of the transportation planning and design process.

The level of detail in the discussions below will vary with the class of document under consideration, with the most consideration and discussion devoted to Environmental Assessments (EAs) and Environmental Impact Statements (EISs).

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### II.B. The Human Environment

#### II.B.1 Land Use Impacts

##### **Background**

Transportation projects have the potential to influence land use as a result of direct or indirect impacts. Direct impacts are defined by Council on Environmental Quality (CEQ) Regulations as “effects which are caused by the action and occur at the same time and place” ([40 CFR 1508](#)). Transportation projects have the potential to directly impact land use by converting it from a non-transportation use to a transportation use. For example, constructing a new roadway where there was none before or adding travel lanes may require the acquisition of permanent right-of-way for the transportation facility. This land is no longer available for other uses. Right-of-way may also be used temporarily, generally for construction activities.

In general, the environmental documentation contains an analysis of direct impacts within the new permanent right-of-way and within the temporary right-of-way. Occasionally, permanent right-of-way that was thought to be owned by the state or a local unit of government must be re-acquired because the original transfer of land ownership was not properly recorded. If so, the undisturbed portion of the re-acquired right-of-way is assessed for impacts.

Indirect impacts are defined in [40 CFR 1508](#) as “effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” Indirect effects may include inducing new development and altering the pattern or rate of change in of land use and population density. The FHWA [Technical Advisory T6640.8A](#) provides a basic discussion of land use impacts.

##### **Process**

The Land Use Impacts section of the environmental document should discuss the physical setting (use) of the landscape within the project area and include an analysis of how the project will

impact the land use. The section should describe current land use patterns and development trends and the state/local government policies (often reflected in a comprehensive plan) with regard to land use and growth in the area. This section should also include the indirect social, economic and environmental impacts of significant development induced by the project. It should assess the consistency of the alternatives with the existing planning documents.

The amount of land directly impacted should be quantified, including temporary, permanent, and re-acquired right-of-way. The preparer should use a system of classification for the assessment of land use and land use changes as a basis for the impact analysis. A broad classification would use such terms as agricultural, residential, commercial, industrial, forest, etc. These general uses can be separated into more detailed categories (i.e. high density single family, low density single family, heavy industrial, etc.) as appropriate to the scale and complexity of the impacts.

### **Area of Review**

The area of review is the project area and surrounding areas that have the potential to experience direct or indirect land use impacts.

### **Related CE/EA Form Section**

Land use impacts and reacquisition of existing right-of-way are discussed in Part II, Right-of-Way.

### **References**

FHWA (1987) *Technical Advisory T6640.8A* November 2008  
<http://environment.fhwa.dot.gov/projdev/impTA6640.asp#land>

Council on Environmental Quality (1978) *40 CFR Part 1508 – Terminology and Index*  
November 2008 <http://ceq.hss.doe.gov/Nepa/regs/ceq/1508.htm>

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## **II.B.2 Farmland Protection Policy Act (FPPA)**

### **Background**

The purpose of the [Farmland Policy Protection Act of 1981 \(FPPA\)](#) is to minimize the contribution of federal programs to the conversion of farmland to non-agricultural uses. The FPPA assures that, to the extent possible, federal programs are administered to be compatible with state and local units of government and private programs and policies to protect farmland. Farmland includes lands with soils that are identified as prime and unique or of statewide or local importance. All land which is not submerged or urbanized is subject to FPPA requirements. The Act seeks to encourage alternatives that would lessen adverse effects to farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are authorized or funded by a federal agency.

## Process

The preparer shall coordinate with the National Resource Conservation Service (NRCS) regarding farmland impacts using the [NRCS-CPA-106](#) form (See Appendix V). This form is completed for all projects to determine whether a site is classified as farmland as defined in [7 CFR 658.2\(a\)](#) and to determine the level of any potential impacts.

The preparer shall complete Parts I and III of the NRCS-CPA-106. Part I includes basic project information including the project name, type, location, and federal agency involved. Part III includes the total acres to be converted directly and indirectly, and total acres required for each alternative. The partially completed form should be sent to the NRCS with appropriate maps and graphics indicating the project site.

The NRCS determines whether the site of the proposed project contains prime, unique, statewide, or local important farmland. For sites where farmland covered by the FPPA will be converted by the proposed project, The NRCS will complete Parts II, IV, and V of the form. The NRCS will return the form to the preparer and retain a file copy for The NRCS records.

The preparer will complete Parts VI and VII of the form and return the form with the final selected site to the NRCS. Part VI includes the assessment of ten criteria for each alternative using the point system described on page two of the NRCS-CPA-106 form. Part VII includes the total points for the project. This will be used by The NRCS to determine whether the proposed conversion is consistent with the FPPA.

The NRCS is required by SAFETEA-LU to reply within 30 days during coordination. In cases where the NRCS fails to complete its response within the required period the preparer would proceed as though the site were not farmland covered by the FPPA. For these cases, the environmental document should include a statement that “the NRCS failed to provide the land evaluation information within the required 30 day period, and therefore, in accordance with 7 CFR 658.4(a)(2), the project site is not considered to be farmland covered by the FPPA.” However, in these cases it is still necessary to consider the impacts to farmland to comply with the NEPA requirements.

The environmental document should discuss the existing farmland resources in the project area, the project’s impacts on farmland, and mitigation and minimization measures considered in relation to farmland. For projects that receive a point value less than 160, the following statement should be included in the environmental document:

*Farmland Conversion Impacts: As is required by the Farmland Protection Policy Act, the NRCS has been coordinated with and the Form NRCS-CPA-106 has been completed. Since this project received a total point value of (include point total), which is less than 160 points, this site will receive no further consideration for farmland protection. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland. This project will not have a significant impact to farmland.*

For projects that result in a CPA-106 score of 160 or greater, additional coordination with the NRCS should be initiated to resolve the impacts.

**Area of Review**

The area of review is any new right-of-way that will be acquired.

**Related CE/EA Form Section**

Farmland impacts are discussed in Part III, Section B: Other Resources.

**References**

U.S. Department of Agriculture (2002) *Farmland Protection Policy Act (FPPA)* November 2008

[http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M\\_440\\_523.htm](http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M_440_523.htm)

U.S. Department of Agriculture (1981) *Farmland Protection Policy Act* November 2008

[http://www.nrcs.usda.gov/programs/fppa/pdf\\_files/7cfr658.pdf](http://www.nrcs.usda.gov/programs/fppa/pdf_files/7cfr658.pdf)

U.S. Department of Agriculture (2002) *Exhibit C-Glossary* November 2008

<http://policy.nrcs.usda.gov/17191.wba> (scroll down page)

U.S. Department of Agriculture *Farmland Conversion Impact Rating for Corridor Type Projects (Form NRCS-CPA-106)* November 2008

[http://www.nrcs.usda.gov/programs/fppa/pdf\\_files/CPA106.pdf](http://www.nrcs.usda.gov/programs/fppa/pdf_files/CPA106.pdf)

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## **II.B.3 Social, Community, and Economic Impacts**

### **II.B.3.a Community Impact Assessment (CIA)**

**Background**

A Community Impact Assessment (CIA) is a tool for identifying and understanding how potential transportation projects will impact communities along the project path. A CIA focuses on the issues that affect the community and the quality of life of its residents, including: public and transportation safety; mobility and access; community cohesion; displacement of people, businesses, and farms; employment effects; tax and property value losses; noise; access to public facilities and services; aesthetic values; destruction or disruption of man-made and natural resources; and effects on community growth.

The goal of a CIA is to identify community concerns early so that they may be considered throughout the project decision-making process; from planning through project development, implementation, operation and maintenance. Effective public involvement is essential to obtaining information about the community, developing alternatives, and developing mitigation plans.

Data for the analysis can be obtained from existing standard sources (Census, Bureau of Labor Statistics, local planning organizations, etc.) and through surveys, interviews, and neighborhood canvasses designed for each project. For example, a business information survey may be administered to businesses located in the affected communities to obtain information about business operations, customer base, transportation needs, and anticipated impacts of the project. See [Section II.B.3.b](#) for more information on the business information survey.

### **Process**

The CIA process should begin during project planning. CIAs are typically performed for large, complex projects and not for Categorical Exclusions (CEs). Each CIA requires a study design and analysis that is unique to the community and project; however, the FHWA has identified the following steps for a successful and complete CIA.

1. Define project, study, and planning area: This includes project alternatives.
2. Develop a community profile: Use demographic data from the US Census, surveys, and any other methods necessary to fully identify communities within the study area.
3. Analyze impacts: Examine impacts of project and alternatives on identified communities.
4. Identify solutions: Address adverse impacts through avoidance, minimization, mitigation, and enhancement.
5. Use public involvement: Public involvement is critical to achieving a robust CIA, to satisfying environmental justice requirements, and to reaching a preferred alternative that the communities can live with.
6. Document findings: The audience for documentation includes decision makers, project implementers, and the public.

The CIA should state the source of all data collected and analyzed. More specific information on how to engage in these steps is available from the [FHWA's Quick Reference](#) and the FHWA's case study materials. A CIA should be developed in coordination with OES and the FHWA.

### **Area of Review**

The area of review is the affected community or communities as defined by analysis.

### **Related CE/EA form section**

A CIA is typically not performed for a CE. Similar information appears in Part III, Section G: Community Impacts.

### **References**

FHWA (2000) *Community Impact Assessment, A Quick Reference for Transportation* November 2008 <http://www.ciatrans.net/index.shtml>

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### II.B.3.b Relocation Impacts

#### Background

The relocation of homes, businesses and farms can be a sensitive part of a transportation project. Relocations change the physical and social relationships between people, their homes and neighbors and may also affect the remaining community. During the early stages of development, problems associated with displacement should be recognized and solutions to minimize any adverse impacts resulting from displacement should be developed, in accordance with the [\*Uniform Relocation Assistance and Real Property Acquisition Policies Act\*](#) (Uniform Act). The purpose of the Uniform Act is to ensure that people relocated by federally-funded projects are treated fairly and consistently, and to minimize litigation that may arise as a result of such projects.

A Conceptual Stage Relocation Study (CSRS) is used to assess the likely effects of relocations on businesses and residents. Guidelines for these studies are provided by INDOT's Office of Real Estate, and apply to anyone that could be relocated by the project.

A business information survey is used during planning stages to gather information about businesses that are likely to be impacted by a project. This includes both businesses that will be relocated and businesses that are in or near the project area.

The OES has developed a sample business information survey for projects involving a CSRS and those involving other levels of study (see Appendix W). The focus is on the impact of the project on the business. The questions on the business information survey can be integrated with the questions from the CSRS business and farms survey. The business information survey covers these topics:

1. Business location.
2. General information.
3. Transportation and markets, including service area, employment area, client characteristics, specialized site requirements, and business vehicles and vehicle access.
4. Project impacts, including expansion/contraction plans.

#### Process

Relocation information may be included in the environmental document either in the form of a complete CSRS, the results of a business information survey, or a summary that adequately explains the relocation situation along with a plan to resolve anticipated and/or known problems. Copies of the preliminary plans or maps detailing the proposed alternative corridors for the specific project should be provided to the relocation section of INDOT's Office of Real Estate for their advance information.

A CSRS is required if the environmental document is an Environmental Impact Statement (EIS). The decision to complete a CSRS for an Environmental Assessment (EA) or a Categorical Exclusion (CE) will depend on the anticipated project impacts, depending primarily on the number of relocations. If a project is anticipated to have more than ten (10) relocations, then OES should be contacted to determine whether a CSRS should be completed. Controversy due to large numbers of relocations may also trigger elevating a project to an EA.

The following are steps in a CSRS:

1. Inventory the characteristics and needs of residents, businesses, farms, non-profits, and institutions that may be relocated.
2. Survey the real estate market to determine whether an adequate supply of replacement property is available.
3. Analyze problems that may arise, including providing advisory services.
4. Propose solutions for foreseeable problems.

Information to be gathered in step one above may consist of questions about the following topics:

1. For businesses, farms, and institutions, the focus is on the execution of the move, with these questions at minimum:
  - a. Site requirements, lease terms, contractual obligations, and financial capacity to move.
  - b. Need for outside assistance in planning and executing the move, such as for equipment installation.
  - c. Identification of personalty (movable asset) and realty (fixed asset) issues.
  - d. Estimation of time required to vacate the site.
  - e. Estimation of difficulty in locating a replacement property.
  - f. Identification of any advance relocation payments required to execute the move.
2. For residences, the focus is on household requirements. Personal interviews are preferred. The survey consists of questions on the following topics, at minimum:
  - a. Family size.
  - b. Owner or tenant status.
  - c. Income range (specific information may be sensitive and inaccurate).
  - d. Number of bedrooms in current home.

Within the environmental analysis, the CSRS could be part of the Community Impact Analysis(es) for the project. The relocation information should be summarized, and the document should reference the CSRS. The CSRS does not need to be appended to the environmental document, but should remain part of the file. Secondary sources of information such as census data, economic reports, visual inspections, and contact with community leaders may be used to obtain information for this analysis.

A business information survey is required for projects involving more than 10 relocations, or 25 percent of the structures in the town if there are fewer than 10 structures. In the case of projects within larger cities, the survey is required for projects involving more than 10 relocations or half of the community/neighborhood. In these cases the OES should be contacted to determine an appropriate area of review.

If no relocations are anticipated as part of the project, a statement to the effect that no relocations will take place should be included in the environmental document.

Should a proposed project result in relocations, the following should be included in the discussion for each alternate:

1. An estimate of the number of households to be displaced, including the family characteristics (e.g. minority, ethnic, handicapped, elderly, large family, income level, and owner/tenant status). For privacy reasons, information on race, ethnicity and income levels should not be included in the document if there are minimal displacements.
2. A discussion comparing available housing in the area meeting the housing needs of those displaced. The comparison should include the following:
  - a. Price ranges.
  - b. Sizes (number of bedrooms).
  - c. Ownership status (owner/tenant).
3. A discussion of any affected neighborhoods, public facilities, non-profit organizations, and families with characteristics (e.g. ethnic, minority, elderly, handicapped, or other factors) that may require special relocation considerations and the measures proposed to resolve these relocation concerns. When a low income population or minority population is affected, this is an environmental justice issue (see [Section II.B.3.e](#)).
4. A discussion of the measures to be taken where the existing housing inventory is insufficient, does not meet federal requirements, or is not within the financial means of those displaced. A commitment to last resort housing should be included when sufficient replacement housing may not be available.
5. An estimate of the numbers, descriptions, types of occupancy (owner/tenant), and sizes (numbers of employees) of businesses and farms to be displaced. Additionally, the discussion should identify:
  - a. Sites available in the area to which the affected businesses may relocate
  - b. Likelihood of such relocation.
  - c. Potential impacts on individual businesses and farms caused by displacement or proximity of the proposed highway if not displaced.
6. A discussion of the results of contacts, if any, with local governments, organizations, groups, and individuals regarding residential and business relocation impacts, including any measures or coordination needed to reduce general and/or specific impacts. These contacts are encouraged for projects with large numbers of relocations or complex relocation requirements. Specific financial and incentive programs or opportunities (beyond those provided by 49 CFR 24) to residential and business relocations to minimize impacts should be identified, if available, through other agencies or organizations.
7. The following statement:

*The acquisition and relocation program will be conducted in accordance with 49 CFR 24 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended. Relocation resources are available to all residential and business relocatees without discrimination. No person displaced by this project will be required to move from a displaced dwelling unless comparable replacement housing is available to that person.*

Relocations should be identified in attached graphics, to the extent that they are known at the time of environmental document approval.

**Area of Review**

The area of review includes any residences, businesses, and farms within the project limits and any new right-of-way.

**Related CE/EA Form Section**

Relocation impacts are discussed in Part II, Right-of-Way and in Part III, Section G: Community Impacts.

**References**

FHWA Real Estate (2006) *Project Development Guide* November 2008

<http://www.fhwa.dot.gov/realestate/relocat.htm>

FHWA Real Estate (1997) *Uniform Relocation Assistance and Real Property Acquisition*

*Policies Act of 1970 as amended* November 2008 <http://www.fhwa.dot.gov/realestate/act.htm>

California Department of Transportation (1997) *Environmental Handbook Vol. 4 Community*

*Impact Assessment* November 2008 <http://www.dot.ca.gov/ser/envhand.htm>

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**II.B.3.c Economic Impacts****Background**

Economic impacts to the human environment must be considered according to [23 U.S.C. 109\(h\)](#). During the development process, both the positive and negative impacts of a project should be considered. The majority of projects will require only a brief discussion in the environmental document, while larger projects may need a thorough analysis of the economic impacts.

**Process**

The first step in the analysis process is to collect data, which can be gathered through a variety of sources including the U.S. Bureau of the Census, Bureau of Labor Statistics, Fed Stats, Metropolitan Planning Organizations (MPOs), state officials, regional planning commission staffs, county planning and zoning officials, urban transportation plans, and local developers and business organizations.

The geographic area that experiences economic impacts must be carefully researched and defined. The area that must be examined should include areas that experience direct impacts and areas that experience indirect impacts. Commuting patterns may be important to this definition. In addition to direct impacts, economic impacts to businesses may be due to changes in employee access or residence, or economic impacts to individuals may occur due to the loss of a job center or a change in access to a job center. It is important to identify these commuter communities and major places of employment in order to account for the overflow of impacts displacing people or businesses.

A business information survey is a good tool for collecting information on impacted or potentially impacted businesses. Refer to [section II.B.3.b](#) Relocation Impacts, for more information regarding a business information survey.

Where there are foreseeable economic impacts, the environmental document should discuss the following impacts for each alternative:

- The economic impacts on the regional and/or local economy, such as:
  - The effects of the project on development, tax revenues and public expenditures.
  - Employment opportunities, accessibility, changes in business environment, and visibility of business, loss of on-street parking, and retail sales. Include the number of employees and customer base for affected businesses.
  - If substantial impacts on the economic viability of affected municipalities are likely to occur, they should be discussed with a summary of efforts undertaken and agreements reached for using the transportation investment to support both public and private economic development plans. To the extent possible, the discussion should rely upon results of coordination with affected state, county, and city officials.
- The impacts on the economic viability of existing highway-related businesses (e.g. gasoline stations, motels, etc.) and the resultant impact on the local economy.
- Impacts of the proposed project on established business districts and how the public and/or private sectors may be able to reduce or minimize such impacts. This concern is likely to occur on a project that might lead to or support large commercial development outside of a central business district.

### **Area of Review**

The area of review is all communities directly or indirectly affected by the project.

### **Related CE/EA Form Section**

Economic Impacts are discussed in Part II, Section G: Community Impacts.

### **References**

California Department of Transportation (1997) *Environmental Handbook Vol. 4 Community Impact Assessment* November 2008 <http://www.dot.ca.gov/ser/envhand.htm>

Florida Department of Transportation (2006) *Efficient Transportation Decision Making* November 2008 <http://www.dot.state.fl.us/emo/pubs/etdm/etdmman.htm>

Wisconsin Department of Transportation: (1999) *Facilities Development Manual* November 2008 <https://trust.dot.state.wi.us/static/standards/fdm/index.htm>

Interagency Council on Statistical Policy (2007) *Fed Stats* November 2008 [www.fedstats.gov](http://www.fedstats.gov)

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### II.B.3.d Social Impacts

#### Background

The social impacts of a project are impacts to populations and communities. Social impacts include any or all of the following:

- Relocations of homes or community resources, such as schools.
- Changes in community cohesion.
- Changes in accessibility within the community.
- Changes in accessibility to community resources and services.
- Changes in pedestrian and bicycle access.
- Construction disruptions.

All levels of environmental documentation must address both social impacts and environmental justice ([see Section II.B.3.e](#)). Certain social impacts, such as relocations, impacts to 4(f) resources, or impacts to groups (especially cohesive communities, including family groupings) trigger higher levels of analysis.

The following factors are indicators of social impacts:

1. Changes in neighborhood or community cohesion: This includes relocations, splitting or isolating neighborhoods or ethnic groups, generating new development, and changing property values.
2. Changes in travel patterns and accessibility: This includes vehicles, bicycles, public transportation, pedestrian access, parking, and closure or termination of streets.
3. Changes in access to community resources and services: Highways have a noticeable impact on public and private community services and strongly affect settlement patterns. These changes may have an effect on perceived quality of life within the entire community or for specific social groups (e.g. children, the elderly, or the transit-dependent) within the community. Resources include schools, churches, parks, recreation facilities, businesses, housing, police and fire protection, medical services, transportation facilities, post offices, libraries landmarks, social gathering places, and government, religious, and social services offices.
4. Changes in highway safety, traffic safety, and public safety: This includes traffic patterns and police and fire protection.
5. Disproportionate effects of changes on social groups: Social groups may be externally identifiable or self-identified. These could include the elderly, children, the handicapped, transit users, non-drivers, low-income groups, and minority, ethnic, and language groups. Effects on low-income or minority groups will trigger environmental justice requirements ([see Section II.B.3.e](#)).

#### Process

The level of investigation and data collection should be proportionate to the size of the project and the size of the affected community. The general process for analyzing and addressing social impacts is to identify community resources and social groups, evaluate the effects of the project on these resources and groups, and mitigate for negative effects. Information sources can include site visits, direct observation, canvassing neighborhoods, surveys of residents, interviews

with community leaders, data from the US Census, and data from and interviews with social and community service agencies.

The environmental document should discuss the following social impacts:

1. Changes in neighborhood or community cohesion: These changes may be beneficial or adverse. The project should be evaluated for effects on population distribution and size and for effects on interactions between people and groups.
2. Changes in travel patterns and accessibility: These changes may be beneficial or adverse. The document should discuss the views of the involved city or county if cross-streets are terminated or if roads are closed. The document should also discuss the number and importance of parking spaces that would be eliminated and the number of remaining or added spaces.
3. Changes in access to community resources and services: Discuss impacts on community resources and services in full detail. Identify a wide range of positive and negative benefits related to the proposed project to provide a balanced perspective.
4. Changes in highway safety, traffic safety, and public safety: Describe the impacts of alternatives on vehicle safety and on delivery of public safety services.
5. Disproportionate effects of changes on social groups: Identify groups and populations specifically benefited or harmed by the proposed action. Describe particular effects of the proposal on those groups to the extent these can be reasonably predicted.

### **Area of Review**

The area of review must be wide enough to allow evaluation of affected communities and resources used by the affected communities.

### **Related CE Form Section**

Social impacts are discussed in Part III, Section G: Community Impacts.

### **References**

US Bureau of the Census November 2008 [www.census.gov](http://www.census.gov)

FHWA (2007) *Environmental Justice* November 2008  
<http://www.fhwa.dot.gov/environment/ej2.htm>

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## **II.B.3.e Environmental Justice**

### **Background**

Executive Order ([E.O. 12898](#)) entitled "Environmental Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" was signed on February 11, 1994. E.O. 12898 is primarily a reaffirmation of the principles of the Civil Rights Act of 1964 ([Title VI](#)). The major difference between E.O. 12898 and Title VI is that the executive order adds low income populations when examining effects. Environmental justice issues are sometimes referred to as Title VI issues.

Environmental justice refers to a special component of the identified social impacts of a transportation project. There are three elements to environmental justice:

- Avoid or mitigate disproportionately high negative effects on low-income or minority populations or communities.
- Ensure full and fair public involvement of these communities in the transportation planning process.
- Prevent denial, reduction, or delay in the receipt of benefits of transportation projects by these communities.

The standard for identifying an environmental justice concern is any impact that would have a disproportionately high and adverse effect on a low-income population or a minority population.

- A low-income population is a population with a median income that is below the federal poverty guidelines (see References below). Higher thresholds are permitted as long as they are uniformly applied.
- A minority population consists of individuals who belong to one or more minority groups. A minority person may be a member of one or more of the [federally-defined races or ethnicities](#), which can change over time and which vary by information-collecting agency. Minority groups may also be defined by religion, language, immigration status, age, disability, or use of services. Self-identification of minority status and group is more accurate than observer identification of minority status and group and is strongly recommended.
- A population may be a group of people living in close geographic proximity or a set of individuals that experiences common environmental exposure and effects.

The identification of an environmental justice concern can require a project to be evaluated at the Environmental Assessment (EA) level or higher and requires coordination with the Federal Highway Administration (FHWA).

A community impact assessment (see [Section II.B.3.a](#)) is a tool for identifying the social and economic impacts of a project, including environmental justice considerations.

### **Process**

Environmental justice concerns should be part of all phases of decision-making. Affected populations must be identified very early in the decision-making process to meet the environmental justice requirement that affected populations be involved in decision-making. The FHWA recommends the following process:

- Determine the positive and negative effects on minority populations and low-income populations during project planning.
- Quantify effects on minority populations and low-income populations.
- Determine the appropriate course of action (avoidance, minimization, or mitigation) for each effect.

Good information is critical to identifying potential environmental justice concerns. Information sources can include the following:

- Data from the US Census, including data from the American Community Survey

- Site visits, community observation, and surveys—surveyors are encouraged to allow self-identification of low-income or minority status or community membership.
- Data from state and local social and community service agencies (e.g. community action agencies often know where their clients live)

Data collection and analysis should be consistent with the size of the project and the size of the impacted community. The analysis of the data should be designed to determine the populations and communities that exist in and near the project area and identify their characteristics relative to a larger reference population. For most projects, the affected population is composed of the Census block groups that overlap the project area and the reference population is the larger jurisdiction (e.g. a municipality or county) that completely contains the affected population.

If comparison of the affected community to the reference population shows that one or more block groups contain a population of concern for environmental justice, the preparer must evaluate the extent to which the project will impact the identified populations and communities. The location of EJ and non-EH populations should be analyzed with respect to the distribution of relocations, additional right-of-way, changes in access, or changes in community cohesion.

At minimum, the environmental document should contain the following information and discussion:

- Presentation of the data from the US Census on race (including Hispanic ethnicity) and income (as poverty status) for the affected Census block groups and for the reference population.
- Identification of populations of concern for environmental justice by comparison of the demographic and income characteristics of the affected Census block groups to the reference population.
- Identification of impacts from relocations, additional right-of-way, changes in access, or changes in community cohesion for EJ and non-EJ populations.
- Description and discussion of any disproportionate negative impacts on EJ and non-EJ populations.

If disproportionate negative impacts are identified through this process, alternatives must be explored to avoid these impacts. These avoidance alternatives can include design restrictions that reduce, eliminate, or redistribute relocations and right-of-way acquisitions. Any remaining disproportionate negative impacts must be mitigated.

Where impacts to minority populations or low-income populations may be a significant concern, the document should contain the following information broken down by income, race, ethnicity, and any other appropriate population or community characteristic, such as national origin or primary language:

- The population in the study area,
- The number of involved or displaced residents and availability of appropriate substitute housing,
- The type and number of displaced businesses, the type and number of displaced employees, and the availability of substitutes for displaced businesses.

The document should also discuss changes in minority employment opportunities and other federal actions which may serve or affect the minority population.

### **Area of Review**

The area of review is the community in and around the project area.

### **Related CE/EA Form Section**

Community impacts are discussed in Part III, Section G: Community Impacts.

### **References**

FHWA 2007 *Environmental Justice* November 2008

<http://www.fhwa.dot.gov/environment/ej2.htm>

FHWA (2007) *Environmental Justice: Facts* November 2008

[www.fhwa.dot.gov/environment/ejustice/facts/index.htm](http://www.fhwa.dot.gov/environment/ejustice/facts/index.htm)

Executive Order 12898 of February 11, 1994: *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* November 2008

<http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf>

The Federal Register *Presidential Executive Orders* November 2008 [www.archives.gov/federal-register/executive-orders](http://www.archives.gov/federal-register/executive-orders)

Office of Management and Budget (1997) *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity* November 2008

[www.whitehouse.gov/omb/fedreg/ombdir15.html](http://www.whitehouse.gov/omb/fedreg/ombdir15.html)

US Bureau of the Census (2000) *Decennial Census Data* November 2008

[www.census.gov](http://www.census.gov)

US Department of Health and Human Services December 2007 *Poverty Guidelines, Research, and Measurement* November 2008

<http://aspe.hhs.gov/poverty/>

US Department of Justice (2003) *Title VI of the Civil Rights Act of 1964* November 2008

<http://www.usdoj.gov/crt/cor/coord/titlevi.php>

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## **II.B.3.f Context Sensitive Solutions (CSS)**

### **Background**

Context Sensitive Solutions (CSS) began as Context Sensitive Design (CSD) in 1991 with the development of the Intermodal Surface Transportation Efficiency Act ([ISTEA](#)). This legislation

emphasized that, in addition to being safe, transportation projects should be sensitive to the surrounding environment and public concerns. With enactment of the National Highway System Act in 1995 ([23 USC 109\(c\)](#)), the planning and design guidelines stated that designs may also account for:

- The constructed and natural environment of the area.
- Impacts of the project upon environmental, scenic, aesthetic, historic, and community resources.
- Access for other modes of transportation.

In 1997, the Federal Highway Administration (FHWA) published [Flexibility in Highway Design](#), which identifies and explains ways to use flexible design standards to lessen the impacts of transportation projects on the environment. During early implementation efforts, transportation agencies realized that decisions made during long range planning affected design choices made during project development. The lessons learned during this period led to the expansion of CSD to go beyond the design process and include all phases of program delivery. This is what is now known as Context Sensitive Solutions (CSS).

The FHWA and AASHTO have refined the 1998 CSD definition, and CSS is now defined as a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions.

INDOT's goal is to incorporate CSS into development, construction, and maintenance processes for improvements to the state jurisdictional transportation system. All INDOT projects are to incorporate CSS into the project development process to facilitate better communication both within the agency and the public.

CSS seeks to benefit the community by: incorporating feedback from the locals affected by the proposed project, encouraging collaboration between neighborhoods and local, state, and federal officials, enhancing roadway and transit communities, considering bicycle and pedestrian access needs, assisting in the development of strategies for smart growth and encouraging assessments and design of alternatives consistent with local needs. CSS involves seeking input from the community and stakeholders in order to build the right project for the right reasons.

CSS promotes the following key principles:

- Use a full range of communication methods early and often, to effectively engage stakeholders and the public.
- Use interdisciplinary teams.
- Seek consensus on purpose and need.
- Document, track, and address all commitments.
- Use all resources effectively in the decision making process.
- Allow for design flexibility while considering a safe facility for all modes.

**Process**

CSS requires an early and continuous commitment to public involvement, flexibility in exploring new solutions, and openness to new ideas. Community members play an important role in identifying local and regional problems and solutions that may better meet and balance the needs of all stakeholders. Early public involvement improves community acceptance of the project and can help reduce expensive and time consuming revisions and thus contributes to more efficient project development.

Context sensitive solutions is guided by a process which:

- Establishes an interdisciplinary team early, including a full range of stakeholders, with skills based on the needs of the transportation activity.
- Seeks to understand the landscape, the community, valued resources, and the role of all appropriate modes of transportation in each unique context before developing engineering solutions.
- Communicates early and continuously with all stakeholders in an open, honest, and respectful manner, and tailors public involvement to the context and phase.
- Utilizes a clearly defined decision-making process.
- Tracks and honors commitments through the life cycle of projects.
- Involves a full range of stakeholders (including transportation officials) in all phases of a transportation program.
- Clearly defines the purpose and seeks consensus on the shared stakeholder vision and scope of projects and activities, while incorporating transportation, community, and environmental elements.
- Secures commitments to the process from local leaders.
- Tailors the transportation development process to the circumstances and uses a process that examines multiple alternatives, including all appropriate modes of transportation, and results in consensus.
- Encourages agency and stakeholder participants to jointly monitor how well the agreed-upon process is working, to improve it as needed, and when completed, to identify any lessons learned.
- Encourages mutually supportive and coordinated multimodal transportation and land-use decisions.
- Draws upon a full range of communication and visualization tools to better inform stakeholders, encourage dialogue, and increase credibility of the process.

The environmental document should discuss activities that have occurred and are planned in the future to satisfy the goals of CSS.

**Area of Review**

The area of review is the project area and adjoining neighborhoods.

**Related CE/EA Form Section**

CSS are discussed in Part I, Public Involvement, Part II, Alternatives; Part II, Project Description; and Part III, Section G, Community Impacts.

## References

FHWA (2008) *FHWA and Context Sensitive Solutions* November 2008

<http://www.fhwa.dot.gov/context/index.cfm>

FHWA *Flexibility in Highway Design* November 2008

<http://www.fhwa.dot.gov/environment/flex/index.htm>

Georgia Department of Transportation (2006) *Context Sensitive Design Online Manual* November 2008

<http://wwwb.dot.ga.gov/csd/index.html>

AASHTO (2008) *Context Sensitive Solutions* November 2008

[http://environment.transportation.org/environmental\\_issues/context\\_sens\\_sol/](http://environment.transportation.org/environmental_issues/context_sens_sol/)

Online Resource Center for Context Solutions (2008) *Context Sensitive Solutions.org* November 2008

[www.ContextSensitiveSolutions.org](http://www.ContextSensitiveSolutions.org)

Millington, Tricia (2001) *Context Sensitive Solutions* New York Construction News November 2008 <https://www.nysdot.gov/divisions/engineering/design/dqab/css/repository/nycart.pdf>

Indiana: Context Sensitive Solutions.org (2007) *A CSS support center for the transportation community* November 2008 <http://www.contextsensitivesolutions.org/content/gen/state-profiles/IN>

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## II.B.3.g Joint Development

### Background

Joint development involves an effort by a public agency (e.g. INDOT, Local Public Agency (LPA)) and a separate developer (e.g. parks department, refuge, concessionaire) to undertake a construction project which integrates transportation infrastructure and non-highway uses. Since these facilities are usually developed independently, considerable coordination is required to achieve mutual goals. Joint development arrangements must be executed through a legally binding agreement between the parties. The public must be kept informed throughout the project. Joint development can be a factor in any size of project.

Highway projects incorporating joint development can be integrated with the development of bikeways, public buildings, apartments, parks, and other public or private undertakings, and may fit better into the overall community than if they were developed separately. Joint development can also be carried out within approaches such as context-sensitive solutions, and can serve as an impetus for economic revitalization and redevelopment.

There are four conditions necessary in order for joint development to work:

1. Healthy real estate market.
2. An agency with an entrepreneurial outlook.
3. Coordination of zoning/re-zoning with local agencies.
4. Realization that benefits of joint development transcend the generation of revenue.

### **Process**

The environmental document should discuss how the implementation of joint development projects will preserve or enhance the community's social, economic, and visual values. This discussion should include information on commercial and residential opportunities, and opportunities for increasing community accessibility and retail sales. It may be presented separately or combined with the land use, and/or social impacts presentations. The benefits to be derived, those who will benefit, and the entities responsible for maintaining the measures should be identified. Joint development plans require approval by both INDOT and the Federal Highway Administration (FHWA).

### **Area of Review**

The area of review is all parcels within the project limits..

### **Related CE/EA Form Section**

Joint Development is discussed in Part II, Project Description, and Part III, Section G: Community Impacts.

### **References**

FHWA (Real Estate) (1996) *Joint Development Study* November 2008

<http://www.fhwa.dot.gov/realestate/jntdev.htm>

California Department of Transportation (1997) *Environmental Handbook Vol. 4-8.6* November

2008 <http://www.dot.ca.gov/ser/envhand.htm>

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## **II.B.4 Section 6(f)**

### **Background**

The Land and Water Conservation Fund (LWCF), was created by the Land and Water Conservation Fund Act of 1965. Funds in the LWCF come primarily from revenues from federal offshore oil and gas leases and are available for federal and state land acquisition for public outdoor recreation. The LWCF program is administered by the National Park Service (NPS). The full text of the statute may be found at [16 USC 460L-4 et seq.](#) and associated regulations may be found at [36 CFR 59.1](#).

Section 6(f) of the LWCF Act is of concern for transportation projects because it restricts conversion of lands that have been acquired with or improved by LWCF grants. The full text of Section 6(f) is as follows:

*No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreational properties of at least equal fair market value and of reasonably equivalent usefulness and location: Provided, That wetland areas and interests therein as identified in the wetlands provisions of the comprehensive plan and proposed to be acquired as suitable replacement property within that same state that is otherwise acceptable to the Secretary, acting through the Director of the National Park Service, shall be considered to be of reasonably equivalent usefulness with the property proposed for conversion.*

Conversion of an LWCF property for any purposes other than public outdoor recreation use requires the approval of the NPS on behalf of the Secretary of the Interior. Land that has benefited from LWCF funds may not be later converted to other purposes without substitution of equivalent land.

The full explanation of the criteria that must be met for the NPS to consider whether land that has received LWCF assistance may be converted to another use may be found at [36 CFR 59.3](#). Briefly, these criteria require the following:

1. Evaluation of all practical alternatives to the conversion.
2. Evaluation of availability of replacement property of equivalent or greater fair market value, usefulness, and location.
3. Verification that the proposed replacement property meets the requirements of eligibility for the LWCF program and is viable for public recreation. Except if certain narrow conditions are met, publicly owned land is not acceptable as replacement property.
4. Consideration of the effect of conversion of part of property on the remaining property.
5. Completion of all federal agency coordination, including with the NPS, and compliance with Section 4(f) (see Process Section below).
6. Preparation of an environmental document for both the LWCF land to be converted and the replacement property.
7. Compliance with the state comprehensive outdoor recreation plan or other equivalent plan.
8. Acquisition in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act.

### **Process**

To document all potential involvements of Section 6(f) properties, all publicly owned land in and adjacent to the proposed project right-of-way should be examined for LWCF involvement as early as possible in project development. In Indiana, the Department of Natural Resources' (DNR) Division of Outdoor Recreation keeps records on properties that have benefited from LWCF funds. Generally, the NPS or the DNR will provide information on LWCF involvement during early coordination. The NPS's list of properties that have received LWCF assistance is also available through the [NPS web site](#).

The “anti-conversion” requirement of the LWCF Act applies to all parks and other sites that have been the subject of Land and Water grants of any type, whether for the acquisition of parkland, development or rehabilitation of facilities. In other words, in most cases, even a relatively small LWCF grant (e.g., for the development of a picnic shelter) in a park of hundreds or even thousands of acres provides anti-conversion protection to the entire park site.

Contact the OES for additional guidance and information if LWCF money was used on the parcel to be acquired. If the property will be acquired, the landowner should, in cooperation with the DNR, begin a search for replacement property. For reference during this process, [Indiana’s Statewide Comprehensive Outdoor Recreation Plan](#) is available on the DNR web site.

In order to initiate conversion of LWCF land, the state liaison officer submits a request to the Director of the NPS. In Indiana, this request comes from the DNR’s Division of Outdoor Recreation. For federally-funded projects, Section 6(f) involvement automatically requires an appropriate Section 4(f) evaluation as well. The NPS’s preliminary approval of the Section 6(f) substitution is required to complete the Section 4(f) evaluation.

All information and documentation about potential and actual Section 6(f) involvement must be included in the environmental document and discussed in the appropriate section of the document.

#### **Area of Review**

The area of review is properties in and adjacent to the project limits.

#### **Related CE/EA Form Section**

Section 6(f) is discussed in Part III, Section D: Section 4(f) Resources/Section 6(f) Resources.

#### **References**

DNR (2007) *Indiana Statewide Comprehensive Outdoor Recreation Plan* November 2008  
<http://www.in.gov/dnr/outdoor/2576.htm>

NPS (2007) *NPS list of LWCF properties* November 2008  
<http://waso-lwcf.ncrc.nps.gov/public/index.cfm>

NPS (2008) *Federal Financial Assistance Manual*, Volume 69, Effective 10-01-2008  
<http://www.ncrc.nps.gov/lwcf/manual/lwcf.pdf>

NPS (2008) *National Park Service, Land and Water Conservation Fund* November 2008  
<http://www.nps.gov/lwcf/>

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## II.B.5 Indirect and Cumulative Impacts

### Background

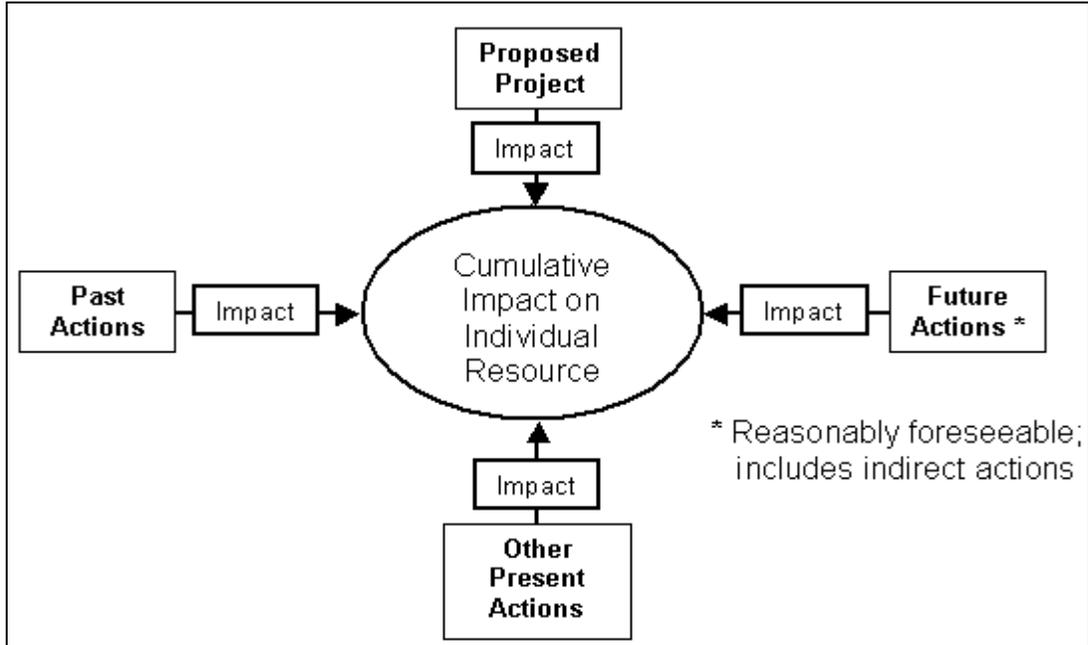
The responsibility of federal agencies to consider and address direct, indirect and cumulative impacts during the National Environmental Policy Act (NEPA) process was established in the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA ([40 CFR 1500-1508](#)).

NEPA, in [42 USC 4321](#), requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations, including direct, indirect and cumulative impacts, are given weight in project decision-making. The Federal Highway Administration (FHWA) environmental regulation ([23 CFR 771](#)) interprets and implements the CEQ guidelines on indirect and cumulative impacts.

Direct effects are caused by the action and occur at the same time and place (40 CFR 1508.8). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Reasonably foreseeable impacts are impacts that are deemed likely to occur in the future based on the best available planning information for the project area (such as formal planning documents, information from community officials, or local land-use/zoning/permitting processes). Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems (40 CFR 1508.8).

Cumulative impacts (Figure II.B.5-1) are the impacts on the environment which result from the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

A cumulative impact analysis is resource specific and generally performed for environmental resources impacted by a transportation project. However, not all of the resources directly impacted by a project will require a cumulative impact analysis. The resources subject to a cumulative impact assessment should be determined on a case-by-case basis early in the NEPA process, generally as part of early coordination or scoping. The project sponsor will consult with the relevant agencies (e.g. Environmental Protection Agency (EPA), Indiana Department of Environmental Management (IDEM), Department of Natural Resources (DNR), U.S. Fish and Wildlife Service (USFWS) regarding methodologies to be used in the cumulative impact assessment.

**Figure II.B.5-1. Cumulative Impact Diagram (courtesy of the FHWA)****Process**

The primary focus is on the project's potential to accelerate change in land use (e.g., urban and suburban growth), that could in turn affect natural resources in the area. The document needs to present a reasonably complete and accurate picture of the probable consequences involved in implementation of a proposed project, commensurate with the potential for adverse impacts and consistent with the provisions of the CEQ regulations.

The focus must be on reasonably foreseeable actions, those that are likely to occur or are probable, rather than those that are merely possible. The project sponsor has the responsibility to make an informed judgment and to estimate future impacts on that basis, especially if trends are ascertainable or potential purchasers have made themselves known. Effects that are considered possible, but not probable, may be excluded from NEPA analysis.

In the early planning phase of project development, local community officials and planning and zoning authorities should be contacted to determine the existence of land-use plans, planning information, and permitting processes that will identify anticipated development in the project area. Where development has preceded the proposed highway project, evaluate whether the project will prompt further development.

The consideration, documentation, and analysis requirements vary in degree by class of action and should adequately reflect the potential for adverse and significant impacts, whether direct, indirect or cumulative.

NEPA does not specifically require substantive mitigation for indirect and cumulative impacts. However, the CEQ regulations require that the environmental impacts statement include

consideration and discussion of possible mitigation for project impacts (40 CFR 1502.14((f)), 1502.16(e-h), 1505.2(c), 1508.25(b)).

### **Area of Review**

The area of review varies by project and should be identified in consultation with the public and appropriate resource agencies.

### **Related CE/EA Form Section**

Indirect and cumulative impacts are discussed in Part III, Section G: Community Impacts.

### **References**

FHWA (2006) *Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process* November 2008

<http://www.environment.fhwa.dot.gov/guidebook/qaimpact.asp>

Illinois Department of Transportation (2002) *Indirect and Cumulative Environmental Impacts* November 2008 <http://www.dot.state.il.us/desenv/BDE%20Manual/BDE/pdf/chap22.pdf>

Washington Department of Transportation (2007) *Indirect and Cumulative Impacts* November 2008 <http://www.wsdot.wa.gov/publications/manuals/fulltext/M31-11/412.pdf>

Council on Environmental Quality (1997) *Considering Cumulative Effects under the National Environmental Policy Act* November 2008 <http://ceq.hss.doe.gov/nepa/ccenepa/ccenepa.htm>

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## **II.B.6 Noise Impacts**

### **Background**

The Federal-Aid Highway Act of 1970 mandated that the Federal Highway Administration (FHWA) develop highway traffic noise standards. [Title 23, Code of Federal Regulation, Part 772](#), entitled “Procedures for Abatement of Highway Traffic Noise and Construction Noise”, describes these noise standards as well as highway traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials. The FHWA policy requires each state department of transportation to adopt a state-specific noise policy, approved by the FHWA, which defines specific terms and describes how the state will implement the noise standards.

The most recent version of the [Indiana Department of Transportation Traffic Noise Policy](#) was approved by the FHWA in February of 2007. The policy provides guidance on when noise studies are required and what information needs to be considered. Please refer to the noise policy for more detailed information. All noise studies must follow the guidelines set by both the INDOT Traffic Noise Policy and the FHWA guidance.

## Process

The first step in the process is to determine if the project is a Type 1 project. A Type 1 project is a proposed federal-aid highway project for the construction of a roadway on new location or the physical alteration of an existing roadway which significantly changes either the horizontal or vertical alignment or increases the number of through lanes (*INDOT's Traffic Noise Policy*). Type 1 projects are the only projects that require noise analysis. The decision to perform a noise study is made by the Office of Environmental Services in Central Office early in the NEPA evaluation stage.

If a noise study is not required, the following statement should be included in the environmental document:

*This project is not a Type 1 project. In accordance with 23 CFR 772 and the INDOT Traffic Noise Policy (approved by the Federal Highway Administration and effective on February 26, 2007), this action does not require formal noise analysis.*

If a noise study is required, the analysis should be completed, submitted and approved prior to the environmental document approval. A copy of the noise study should also be included in the appendix of the environmental document with a summary of the study included in the text of the document. The summary should include the following information:

- The number of receivers identified and the appropriate Noise Abatement Category ([NAC](#)).
- The existing and future noise levels predicted.
- The number of impacted receivers.
- If noise abatement is feasible and reasonable:
  - Based on the studies completed to date, noise abatement is feasible and reasonable. These preliminary indications of likely abatement measures are based upon preliminary design for a barrier that is \_\_\_\_ (feet/meters) high and \_\_\_\_ (feet/meters) long at a cost of \$\_\_\_\_\_ that will reduce the noise level by \_\_\_\_ dBA for \_\_\_\_ benefited receivers (*Where there is more than one barrier, provide information for each one*). Changes to these abatement measures may be necessary due to conditions encountered during final design. A final decision on the installation of abatement measure(s) will be made upon completion of the project design and the public involvement process.
- If noise abatement is not feasible:
  - Based on the studies completed to date, noise abatement is not feasible due to (provide explanation). Noise abatement will be reevaluated during the final design if design concept or scope change.
- If noise abatement is not reasonable:
  - Based on the studies completed to date, noise abatement is not reasonable due to (provide explanation). Noise abatement will be reevaluated during the final design if design concept or scope change.

The noise study must contain the following items:

1. A brief description of noise sensitive areas (residences, businesses, schools, parks, etc), including information on the number and types of activities which may be affected. This should include developed lands and undeveloped lands.
2. A description of the existing noise levels for the receivers which may be impacted.
3. A description of the future noise levels expected to occur as a result of the project for each alternative under consideration, including the do nothing alternative.
4. The identification and description of traffic noise impacts for each sensitive area. This includes a comparison of the predicted noise levels to both the FHWA noise abatement criteria and the existing noise levels. Use of a table for this comparison is recommended for clarity.
5. Identification of noise abatement measures which have been considered for each impacted area and those measures that are feasible and reasonable and would "likely" be incorporated into the proposed project. Noise barriers are typically the only feasible and reasonable abatement measures; however, the following traffic control measures should also be evaluated:
  - a. Prohibition or restrictions in use of certain vehicle types.
  - b. Modified speed limits.
  - c. Zoning control to exclude noise-sensitive land use.
  - d. Traffic control devices.
6. The criteria used to determine if abatement is feasible and reasonable should be discussed, including cases where no prudent solutions exist for identified noise impacts.
7. Map(s) that show the following information:
  - a. The 66 dBA contour line.
  - b. All of the receivers that were studied.
  - c. Reasonable and feasible noise mitigation.
8. All FHWA-TNM input data and results.

If a sound wall is found to be feasible and reasonable, public involvement must be initiated to determine the views of the benefited receivers. A sound wall will only be found reasonable if a majority of the benefited receivers (51% or more) has expressed interest in the wall. Once the final design has been completed, another noise study will be completed to determine if the sound wall is still feasible and reasonable. A public meeting is scheduled once the sound wall has been designed to allow benefited receivers an opportunity to pick the wall texture and color for the sound wall that will face the receivers. INDOT selects the color and texture for the portion of the wall that faces the roadway.

### **Area of Review**

The area of review for a noise analysis is the area within 500 feet from the edge of the roadway. Please refer to the noise policy for more detailed information.

### **Related CE/EA Form Section**

Noise studies are discussed in Part III, Section F: Noise.

## References

FHWA (1995) *Highway Traffic Noise Analysis and Abatement Policy and Guidance* November 2008

<http://www.fhwa.dot.gov/environment/polguid.pdf>

INDOT (2007) *Traffic Noise Policy* November 2008

[http://www.in.gov/indot/files/INDOTNoisePolicy\(1\).pdf](http://www.in.gov/indot/files/INDOTNoisePolicy(1).pdf)

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## II.B.7 Air Quality Impacts

### II.B.7a Project Level Conformity

#### Background

Transportation projects have the potential to impact air quality by changing the volume, location and character of motor vehicle traffic. These impacts, which can contribute to health risks and a general decreased quality of life, need to be examined during the NEPA process to determine the magnitude and frequency of the impact.

The [Clean Air Act](#) (CAA) was passed by Congress in 1970 to protect and enhance air quality and to assist state and local governments with air pollution prevention programs. It established six criteria pollutants and required the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for these criteria pollutants. The six criteria pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM) and sulfur dioxide (SO<sub>2</sub>).

The CAA was amended in 1977 to set new goals for achieving attainment of NAAQS. This amendment also requires a qualitative discussion of the air quality impacts of transportation projects and any transportation control measures (TCMs) which may be used to mitigate the air quality impacts attributable to the project.

The [CAA amendments \(CAAA\) of 1990](#) were intended to meet unaddressed or insufficiently addressed problems such as acid rain, ground level ozone, air toxics and stratospheric ozone depletion. Specific criteria were established for areas that did not meet the NAAQS for each criteria pollutant. The amendments also mandated the development and implementation of State Implementation Plans (SIPs) and specific timetables for implementing mobile source emission control strategies. If the criteria are not met, EPA can impose sanctions on all or part of the state.

The [Intermodal Surface Transportation Efficiency Act](#) (ISTEA) of 1991 and subsequent legislation including the [Transportation Efficiency Act for the 21<sup>st</sup> Century \(TEA 21\)](#), offer tools to help transportation decision makers carry out the CAAA mandates. ISTEA strengthened the role of the Metropolitan Planning Organization (MPO) in transportation planning and programming while emphasizing intermodalism and the environment. Furthermore, ISTEA linked transportation and environmental goals by providing funding flexibility and the

*Congestion Mitigation and Air Quality Improvement Program* (CMAQ). The *Safe, Accountable, Flexible, Efficient Transportation Efficiency Act – Legacy for Users* (SAFETEA-LU) includes an expanded list of eligible CMAQ projects and revisions to some conformity and planning requirements.

### Criteria Pollutants

Criteria pollutants are those that adversely affect human health and safety. The NAAQS for each pollutant are set at levels to ensure adequate protection of the public. NAAQS have been established for the following pollutants:

Pollutant Name	Chemical Abbreviation
Carbon Monoxide	CO
Ozone	O <sub>3</sub>
Particulate Matter (Coarse and Fine)	PM <sub>10</sub> (Coarse) and PM <sub>2.5</sub> (Fine)
Nitrogen Dioxide	NO <sub>2</sub>
Lead	Pb
Sulfur Dioxide	SO <sub>2</sub>

Three of the criteria pollutants (CO, O<sub>3</sub>, and PM) are produced by mobile sources and must be considered during the NEPA process for transportation projects. NO<sub>2</sub> is a transportation-related pollutant and has been included in the regulations of NO<sub>x</sub> (a precursor pollutant for ozone). The remaining two criteria pollutants are not transportation related pollutants and do not have to be considered during the NEPA process.

For more information on criteria pollutants and health effects, please see Appendix MM.

### **Nonattainment and Maintenance Areas**

The CAA established three designations for areas based on ambient air quality conditions observed for each criteria pollutant:

- **Nonattainment Area:** areas that currently exceed the NAAQS for a criteria pollutant. Once an area is designated as nonattainment, the state must create a SIP to bring the area back into attainment.
- **Maintenance Area:** areas that at one time were designated as nonattainment but have since met the NAAQS for the exceeded criteria pollutant. Maintenance areas are required to have a plan to remain in attainment for at least 20 years.
- **Attainment Area:** areas that have never exceeded the NAAQS for any of the six criteria pollutants.

Nonattainment areas may also be given classifications based on the magnitude of the area's air quality problem. Nonattainment classifications are used to specify certain regulatory requirements, establish deadlines for states to submit air quality plans, and determine when an area must be in compliance (attainment) with the NAAQS.

- For ozone the nonattainment classifications are marginal, moderate, serious, severe, and extreme.
- For carbon monoxide and particulate matter the classifications are moderate and serious.

**Table 1: Indiana Nonattainment and Maintenance Areas (as of November 2008)**  
 (Please refer to the [EPA](#) or [IDEM](#) website for the current attainment status)

County	Entity Responsible for Conformity Demonstration	NAAQS Exceeded
Allen	Northeastern Indiana Regional Coordinating Council (NIRCC)	O <sub>3</sub>
Boone	Indianapolis Metropolitan Planning Organization (IMPO)	O <sub>3</sub>
Clark	Kentuckiana Regional Planning and Development Agency (KIPDA)	O <sub>3</sub> , PM <sub>2.5</sub>
Dearborn (Lawrenceburg Township only)	Ohio-Kentucky-Indiana Regional Council of Governments (OKI)	O <sub>3</sub> , PM <sub>2.5</sub>
Delaware	Delaware-Muncie Metropolitan Plan Commission (DMMPC)	O <sub>3</sub>
Dubois	Evansville MPO	PM <sub>2.5</sub>
Elkhart	Michiana Area Council of Governments (MACOG)	O <sub>3</sub>
Floyd	KIPDA	O <sub>3</sub> , PM <sub>2.5</sub>
Gibson (Montgomery Township only)	Evansville MPO	PM <sub>2.5</sub>
Greene	None - Contact OES	O <sub>3</sub>
Hamilton	IMPO	O <sub>3</sub> , PM <sub>2.5</sub>
Hancock	IMPO	O <sub>3</sub>
Hendricks	IMPO	O <sub>3</sub> , PM <sub>2.5</sub>
Jackson	None – Contact OES	O <sub>3</sub>
Jefferson (Madison Township only)	KIPDA	PM <sub>2.5</sub>
Johnson	IMPO*	O <sub>3</sub> , PM <sub>2.5</sub>
Lake	Northwestern Indiana Regional Planning Commission (NIRPC)	CO**, O <sub>3</sub> , PM <sub>2.5</sub>
LaPorte	NIRPC	O <sub>3</sub>
Madison	IMPO	O <sub>3</sub>
Marion	IMPO	CO**, O <sub>3</sub> , PM <sub>2.5</sub>
Morgan	IMPO	O <sub>3</sub> , PM <sub>2.5</sub>
Pike (Washington Township only)	Evansville MPO	PM <sub>2.5</sub>
Porter	NIRPC	O <sub>3</sub> , PM <sub>2.5</sub>
Shelby	IMPO*	O <sub>3</sub>
Spencer (Ohio Township only)	Evansville MPO	PM <sub>2.5</sub>
St. Joseph	MACOG	O <sub>3</sub>
Vanderburgh	Evansville MPO	O <sub>3</sub> , PM <sub>2.5</sub>
Vigo	West Central Indiana Economic Development District (WCIEDD)	O <sub>3</sub>
Warrick	Evansville MPO	O <sub>3</sub> , PM <sub>2.5</sub>

\* Parts of Johnson and Shelby counties are included in CAMPO's boundary. Emissions modeling for these areas are included in the modeling done by the IMPO.

\*\* The CO maintenance areas are located in East Chicago (Lake County) and downtown Indianapolis (Marion County). See the map of the exact location on the [EPA](#) website.

### **State Implementation Plan (SIP)**

The SIP is developed by the Indiana Department of Environmental Management (IDEM) and demonstrates how the state will attain and maintain compliance with the NAAQS. The SIPs are submitted to and approved by the EPA. Revisions are required when one or more of the following occurs:

- New federal or state requirements are enacted.
- New modeling tools and techniques become available.
- A specific area's attainment status changes.
- An area fails to reach attainment by the deadline in the SIP.

Revisions are usually prepared with a focus on a particular nonattainment area, a particular control strategy, or a specific industrial facility and can be done for portions of the SIP instead of rewriting the whole document.

The SIP also establishes the motor vehicle emissions budget, which is not a financial figure but rather an emissions limit. In order to demonstrate that the SIP will achieve the emission reductions necessary for compliance, limits are established on the amount of emissions that any one source category can emit. For the on-road mobile source category (i.e., transportation projects) this limit is referred to as the motor vehicle emissions budget (aka the MVEB or "the budget"). Metropolitan Planning Organizations (MPOs) are required to demonstrate that transportation plans and programs stay within these budgets. This demonstration is done through the transportation conformity process.

MPOs were created by Congress in 1962 through the [Federal Aid Highway Act](#) and are the regional organizations responsible for comprehensive transportation planning and programming in urbanized areas, with the cooperation of state and local jurisdictions. MPOs are required in every urbanized area with a population of 50,000 or more as a condition for receiving certain highway and mass transit funds. Indiana currently has 14 MPOs representing 15 urbanized areas within the state.

The Transportation Conformity Rule, [40 CFR Parts 51 and 93](#), requires MPOs to determine that Long Range Transportation Plans (TP) and Transportation Improvement Programs (TIPs) conform to the SIP by meeting the requirements of the [Conformity Rule](#), including meeting the emissions budget and the implemented schedule of Transportation Control Measures (TCMs) established in the SIP for air quality. A TP is the official intermodal metropolitan transportation plan developed through the metropolitan planning process for the metropolitan planning area. It is a long-range, federally required 20 year planning document prepared by the MPO. A TIP is a staged, four year, intermodal program of transportation projects prepared by the MPO, covering the entire MPO planning area, and must be consistent with the TP. All funded projects within the boundary of the MPO must be included in the TIP. All of the various MPO TIPs are combined into the INSTIP (Indiana State Transportation Improvement Program), which covers four years of transportation projects and is approved by the FHWA.

### **Project Level Transportation Conformity**

The conformity process was designed to ensure that federal funding and approval are only given to those transportation activities that are consistent with air quality goals. The conformity process

ensures that transportation projects do not create any new violations, increase the frequency or severity of existing violations, or interfere with the purpose of the SIP, which is to meet the EPA standards for air quality.

Conformity applies to non-exempt projects which are funded and/or approved by the USDOT in nonattainment or maintenance areas. Exempt projects are mostly projects that maintain existing transportation facilities or improve mass transit or air quality and are considered to have a neutral impact on air quality ([Table 2](#)). Federally-funded exempt projects are still required to be listed in the TIP for a MPO area.

Project level conformity determination is required prior to the approval of any NEPA document. Construction-related air quality effects do not require a conformity determination if they are temporary, which is defined as lasting less than five years at a given location. To fulfill the conformity requirement, the project must come from a conforming TP and TIP, which means that:

- Project must be specifically included in the conforming TP and TIP if within the TIP four year funding period, and
- Project's design concept and scope have not changed significantly from those which were described in the TP and TIP.

Design concept and scope must be sufficiently defined to estimate emissions at the time of the conformity determination.

Design concept is the type of facility identified by the project (e.g. freeway, expressway, arterial highway). Design scope indicates design aspects which will affect the proposed facility's impact on regional emissions (e.g. number of lanes, access control, signalization).

The responsibility for demonstrating conformity falls upon the MPO and the FHWA. These agencies must ensure that the TP and TIP within the metropolitan planning boundaries conform to the SIP. In metropolitan areas, the policy board of each MPO must formally make a conformity determination on its TP and TIP prior to submitting them to the FHWA for review and its conformity determination. Conformity determinations by an MPO must consider emissions from all projects in the nonattainment or maintenance area, including projects located in a "donut" area (areas outside a MPO boundary but inside a nonattainment or maintenance area). For this reason, the metropolitan planning process must address the donut area in some manner during the development of a TP, TIP and regional emissions analysis. Conformity determinations for projects located in isolated rural areas (nonattainment or maintenance areas that do not have a MPO and are not included in the regional emissions analysis) must also be supported by a regional emission analysis that is the responsibility of the project sponsor, usually INDOT.

The conformity regulations impose a three year time limit on project-level conformity determinations. Conformity will have to be re-determined unless one of the following actions has been completed within three years of the original conformity determination:

1. NEPA process completion.
2. Start of final design.
3. Acquisition of a significant portion of right-of-way.

4. Approval of the plans, specifications and estimates.
5. Construction.

If the project has undergone significant change in design scope and concept since the conformity determination, or if the project requires supplemental environmental documentation for air quality purposes, a new conformity determination is required.

Areas which are in nonattainment or maintenance for CO or PM may also be required to demonstrate that no new localized violations of these pollutants will result from project implementation. Refer to section [II.B.7b](#) for more information on hot spot analysis.

**Table 2: List of Exempt Projects From [40 CFR 93.126](#) Table 2**

<p><u>Safety</u></p> <p>Railroad/highway crossing  Hazard elimination program  Safer non-Federal-aid system roads  Shoulder improvements  Increasing sight distance  Safety improvement program  Traffic control devices and operating assistance other than signalization projects  Railroad/highway crossing warning devices  Guardrails, median barriers, crash cushions  Pavement resurfacing and/or rehabilitation  Pavement marking demonstration  Emergency relief (23 U.S.C. 125)  Fencing  Skid treatments  Safety roadside rest areas  Adding medians  Truck climbing lanes outside the urbanized area  Lighting improvements  Widening narrow pavements or reconstructing bridges (no additional travel lanes)  Emergency truck pullovers</p> <p><u>Mass Transit</u></p> <p>Operating assistance to transit agencies  Purchase of support vehicles.  Rehabilitation of transit vehicles<sup>1</sup>  Purchase of office, shop, and operating equipment for existing facilities  Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.)  Construction or renovation of power, signal, and communications systems  Construction of small passenger shelters and information kiosks  Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures)  Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way  Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet<sup>1</sup>  Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR part 771</p> <p><u>Air Quality</u></p> <p>Continuation of ride-sharing and van-pooling promotion activities at current levels  Bicycle and pedestrian facilities</p>
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**Other**

Specific activities which do not involve or lead directly to construction, such as:

Planning and technical studies

Grants for training and research programs

Planning activities conducted pursuant to titles 23 and 49 U.S.C.

Federal-aid systems revisions

Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action

Noise attenuation

Emergency or hardship advance land acquisitions (23 CFR 710.503)

Acquisition of scenic easements

Plantings, landscaping, etc

Sign removal

Directional and informational signs

Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities)

Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes

**Transportation Control Measures**

A transportation control measure (TCM) is any measure that is specifically identified in the SIP for the purpose of reducing emissions or concentrations of air pollutants from transportation sources. TCMs are typically targeted at reducing vehicle use or changing traffic flow or congestion conditions. Currently, Indiana does not have any TCMs.

Examples include:

1. Programs for improved public transit.
2. Passenger bus or high occupancy vehicle (HOV) lanes.
3. Traffic signal optimization projects designed to improve traffic flow.
4. Employer-sponsored programs to permit flexible work schedules.
5. Fringe and transportation corridor parking facilities serving multiple-occupancy vehicle programs or transit service.
6. Programs for the provision of all forms of high-occupancy, shared ride services.

In areas where TCMs are included in the SIP, the MPO or state must ensure that all TCMs have funding priority consistent with the SIP schedule for implementation as a condition of conformity. This provision is incorporated into the conformity process partly to ensure that TCMs are not postponed due to lack of a funding commitment. This can be a useful tool in reinforcing the linkages between SIPs and transportation plans and TIPs, and may require local, regional, and state transportation officials to make investment trade-offs between projects to ensure that TCMs are implemented.

**Congestion Mitigation and Air Quality (CMAQ) Improvement Program**

In 1991, Congress adopted ISTEA, which authorized the CMAQ program and authorized funding for surface transportation and other related projects that contribute to air quality improvements and reductions in congestion. The CMAQ program, jointly administered by the

FHWA and FTA, was reauthorized in 1998 under TEA-21. TEA-21 provided funds to state DOTs, MPOs, and transit agencies to invest in projects that reduce criteria air pollutants from transportation-related sources over a period of six years (1998-2003).

SAFETEA-LU of 2005 reauthorized the CMAQ program through fiscal year 2009, and included additional funds for CMAQ projects for fiscal years 2005-2009. SAFETEA-LU also includes an expanded list of eligible projects and revisions to some conformity and planning requirements.

CMAQ funding does not exempt projects from environmental review under NEPA and other relevant laws. Significant transportation projects, such as HOV lanes, may trigger the need for an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). Minor projects, such as signal retiming and providing auxiliary lanes, typically only require a categorical exclusion.

### **Greenhouse Gases and Climate Change**

According to the [FHWA](#), transportation is responsible for approximately one-quarter of the greenhouse gas emissions for the United States. Under the Clean Air Act, the EPA has the authority to establish motor vehicle emissions standards for CO<sub>2</sub> and other greenhouse gases. The [EPA](#) has not established those emissions standards. When those standards are established, greenhouse gases will be addressed in more detail in this manual.

### **Process – Air Quality and Conformity**

The air quality analysis that is required during the NEPA process will vary considerably in content and in level of detail from one project to another based on the scope, size, geographic location, background conditions and anticipated impacts.

The first step in the transportation conformity process is to determine whether the project is in a nonattainment or maintenance area. The next step is to determine if the project is exempt from a conformity determination (see section [Table 2](#)). If the project is exempt from conformity but will be receiving federal funds, the project must be included in the TIP for the MPO area or INSTIP for areas outside of an MPO. If the project is not exempt from conformity, then the next step will be to determine if the project is part of a conforming TP and TIP (if within the four year TIP funding period). The conforming TP and TIP must be in place and the project must be accurately reflected in both documents. For projects located within an MPO boundary, the MPO should be contacted to determine if the project is included in the TP and TIP and to verify that the design concept and scope are accurately reflected in both.

If a non-exempt project is located in an isolated rural area, the project sponsor is responsible for obtaining the conformity determination during the NEPA process. The conformity determination is done a project-by-project basis and involves the following process:

1. An initial meeting with the interagency consultation group, typically a conference call, will need to be completed. The consultation group should include INDOT, IDEM, the FHWA, the FTA and the EPA. The purpose of this meeting is to establish consensus on the latest planning assumptions and analysis methodology.
2. The development of the Air Quality Conformity Analysis (AQCA) will be completed following the interagency meeting.

3. Public comment on the AQCA should take place during the NEPA public involvement process.
4. The AQCA is then updated to include a summary of all comments received during the public involvement process.
5. The final AQCA is then submitted to the FHWA with a request for the FHWA to initiate formal consultation.
6. FHWA will make the conformity finding as part of the NEPA process.

If the project is non-exempt and is not included in the conforming TP and TIP, then the project will need to be amended into the MPO's TP and TIP before a conformity determination can be given. It is important to identify these changes early, because the amendment process could take up to a year or more to complete. Each MPO has their own schedule for updating the TP and TIP and any revisions that are needed will have to wait until the next scheduled revision.

The following information needs to be included in the environmental document:

- The attainment status of the county in which the project is located,
- Whether the project is exempt from conformity determination,
- If the project is not exempt from conformity:
  - An indication of whether the project is accurately reflected in the TP and TIP (if within the four year TIP funding period) and the date of the USDOT TP and TIP conformity finding.
  - Verification that the design concept and scope have not changed since the TP and TIP were found to conform.
  - The name of the person at the MPO or INDOT who provided the information.

If TCMs are identified in the SIP, the environmental document should discuss the project's potential to affect the implementation of the TCMs. Currently Indiana does not have any TCMs identified in the SIP.

The following statement should be included in an environmental impact statement with regard to greenhouse gas emissions and climate change:

*From a policy standpoint, FHWA's current approach on the issue of climate change is as follows: To date, no national standards have been established regarding greenhouse gases, nor has EPA established criteria or thresholds for greenhouse gas emissions. On April 2, 2007, the Supreme Court issued a decision in Massachusetts et al v. Environmental Protection Agency et al that the USEPA does have authority under the Clean Air Act to establish motor vehicle emissions standards for CO<sub>2</sub> (carbon dioxide) emissions. The USEPA is currently determining the implications to national policies and programs as a result of the Supreme Court decision. However, the Court's decision did not have any direct implications on requirements for developing transportation projects.*

*FHWA does not believe it is informative at this point to consider greenhouse gas emissions in an Environmental Impact Statement (EIS). The climate impacts of CO<sub>2</sub> emissions are global in nature. Analyzing how alternatives evaluated in an EIS might vary in their relatively small contribution to a global problem will not better inform*

*decisions. Further, due to the interactions between elements of the transportation system as a whole, emissions analyses would be less informative than ones conducted at regional, state, or national levels. Because of these concerns, FHWA concludes that we cannot usefully evaluate CO<sub>2</sub> emissions in this EIS in the same way that we address other vehicle emissions.*

*FHWA is actively engaged in many other activities with the Department of Transportation Center for Climate Change to develop strategies to reduce transportation's contribution to greenhouse gases—particularly CO<sub>2</sub> emissions—and to assess the risks to transportation systems and services from climate change. FHWA will continue to pursue these efforts as productive steps to address this important issue. FHWA will review and update its approach to climate change at both the project and policy level as more information emerges and as policies and legal requirements evolve.*

### **Area of Review**

The area of review for an air conformity determination is the entire nonattainment or maintenance area.

### **Related CE/EA Form Section**

Air quality impacts are discussed in Part III, Section E: Air Quality.

### **References**

See the reference list at the end of the air quality section.

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## **II.B.7b Hot Spot Analyses**

### **Background**

A hot spot analysis is defined in [40 CFR 93.101](#) as an estimation of likely future localized PM<sub>2.5</sub>, PM<sub>10</sub>, or CO pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area. Such an analysis is a means of demonstrating that a transportation project meets the CAA conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts ([40 CFR Part 93](#)).

Hot spot analyses are required for all nonexempt projects that are located in CO nonattainment or maintenance areas. CO hotspot analyses are also required for all major actions (EISs), regardless of the attainment status, for NEPA disclosure purposes and to demonstrate that the federal action will not result in localized exceedances of the CO NAAQS. For projects located in PM nonattainment or maintenance areas, a hot spot analysis is required for all nonexempt projects of air quality concern. The requirement is met if it is demonstrated that during the time frame of the TP, no new local violations will be created and the severity or number of existing violations will not be increased as a result of the project.

### CO Hot Spot Analysis

In order to determine conformity for non-exempt projects, the analysis of CO concentrations must demonstrate that there are no violations of the NAAQS, or if there are existing violations of the NAAQS, that the project will not worsen those existing violations. For NEPA purposes, if the total CO concentrations are less than the one hour and the eight hour NAAQS, the project is considered to have minimal environmental impacts and does not require consideration of mitigation for long-term air quality impacts.

For non-exempt projects in CO non-attainment or maintenance areas, a quantitative CO hot spot analysis must be prepared using the most recent version of the Environmental Protection Agency (EPA) mobile source emission factor model (currently MOBILE 6.2) and the CAL3QHC Version 2.0 air quality dispersion model. For projects affecting more than five or six intersections, a screening procedure based on traffic volumes and level of congestion can be used to select the three to four worst-case intersections for CO hot spot modeling. If no exceedances of CO standards are modeled for the worst case intersections, lower volume intersections can also be assumed to pass the hot spot test. This screening procedure reduces the amount of modeling required, yet still complies with the intent of the transportation conformity rule.

For non-exempt projects in attainment areas, a quantitative analysis is required if the project scope exceeds either of the following thresholds:

1. Two 8-lane arterials at a signalized intersection, or
2. Interstate interchanges involving 10-lane by 8-lane grade-separated freeway crossover.

If the project scope is equivalent to or less than the above thresholds, then the NEPA document should include the following finding: "Based on the Indiana CO Screening Criteria, this project does not meet the criteria requiring a CO project level analysis and will not produce a projected violation of the CO standards (35 ppm over a 1-hour or 9 ppm over an 8-hour period)." FHWA modeling has determined that such highway projects operating at LOS E for temperatures representative of the continental U.S. coldest morning temperature, and no Inspection & Maintenance Program, anti-tampering, or reformulated fuels programs do not exceed the CO NAAQS.

### PM Hot Spot Analysis

To meet statutory requirements, the [Transportation Conformity Rule](#) requires PM hot spot analyses to be performed for projects of air quality concern located in PM<sub>10</sub> or PM<sub>2.5</sub> nonattainment or maintenance areas. The focus of the rule is on what are called projects of air quality concern. These are certain highway and transit projects that involve significant levels of diesel traffic and require a hot spot analysis. These project types are defined in [40 CFR 93.123\(b\)\(1\)](#) as the following:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.
- Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.
- Projects in or affecting locations, areas, or categories of sites which are identified in the applicable PM implementation plan or submission, as appropriate, as sites of violation or possible violation.

The objective of the hot spot analysis is to make certain that the proposed transportation project will not cause or worsen a violation of the NAAQS. All projects located in PM nonattainment or maintenance areas that have federal funding or approval must be classified as one of the following:

- Exempt: projects that are exempt from air conformity (see [Table 2](#) in section II.B.7a) are also exempt from hot spot analysis.
- Projects Not of Air Quality Concern: if a project does not meet the criteria to be classified as exempt, the project sponsor will need to determine if the project is of air quality concern. If the project sponsor is not sure if the project is of air quality concern, interagency consultation should be initiated to determine the correct classification.
- Projects of Air Quality Concern: if a project is determined to be a project of air quality concern, a qualitative hot spot analysis will be required.

If the project will require a qualitative hot spot analysis, the March 2006 EPA/FHWA Guidance document [Transportation Conformity Guidance for Qualitative Hot spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas](#) should be referenced for more information.

### Process

Federally-funded or approved transportation projects located in CO or PM nonattainment or maintenance areas may require a hot spot analysis (see [Figure 1](#) for a flowchart). For all federal major actions (EISs), a CO hot spot analysis is required. Projects that are exempt from the conformity requirements (see [Table 2](#)) are also exempt from the hot spot analysis requirement. Ultimately it is the project sponsor's responsibility to determine if a hot spot analysis is required, ensure that the consultation requirements are completed, complete the hot spot analysis and include the results in the NEPA document.

If a hot spot analysis is required (see [Figure 1](#)), the next step is to determine which roadways and intersections in the project area should be evaluated for air quality impacts. Intersections that are to be constructed, reconstructed or modified should be considered, as well as any intersections that will be impacted indirectly by the proposed project. The following information is needed to determine which intersections to include in the analysis and to complete the hot spot analysis:

- Project design plans or sketches.
- Traffic volumes – peak hour traffic volumes and turning movements for existing and future conditions.
- Traffic signal timing information – can use either the existing timing, timing used in the level of service analysis or percentage of green time.
- Level of service analysis.
- Emission factors – both free-flow and idle motor vehicle emission factors can be determined using Mobile6.2 emission factor model. This is for a CO hot spot analysis only.

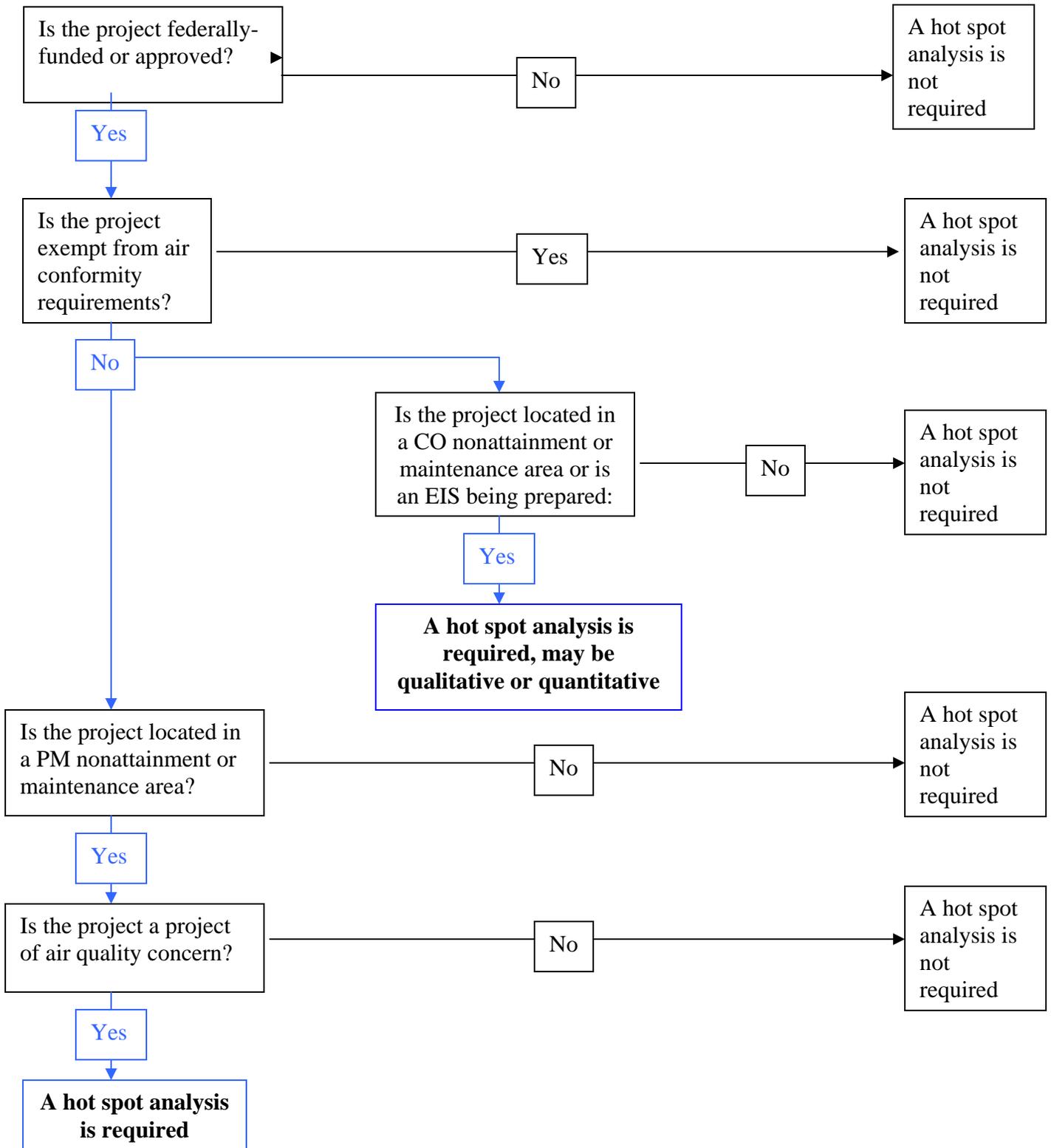
Interagency consultation is required to evaluate and choose appropriate methods and assumptions to be used in the hot spot analysis. The consultation process can also be utilized to determine if a hot spot analysis is required. The different agencies that can be involved in the interagency consultation process include the project sponsor, INDOT, Indiana Department of Environmental Management (IDEM), EPA, FHWA and the Federal Transit Administration (FTA).

The hot spot analysis should include sufficient documentation to justify the conclusion that a proposed project meets the hot spot requirements. The amount of documentation needed and method of analysis chosen will vary by project. It should include the following information:

- Proposed project description – location, scope, and when it will open it traffic.
- The method chosen to conduct the analysis.
- A description of the existing conditions and analysis year examined.
- Details of the interagency consultation.
- Any mitigation measures that will be implemented and their expected results.
- A statement on how the proposed project meets the hot spot analysis and conformity requirements.

If the hot spot analysis determines that the proposed project has the potential to create new violations or increase the severity or frequency of an existing violation, mitigation measures need to be considered to reduce the impacts of the project. In these cases, written commitments for project level mitigation or control measures must be obtained from the project sponsor prior to making a project level conformity determination.

**Figure 1: Hot Spot Analysis Flow Chart**



### **Area of Review**

The area of review for potential hot spots is the area in and around the project limits. The study area for the hot spot analysis is determined through the consultation process with the appropriate agencies.

### **Related CE/EA Form Section**

Hot spot analyses are discussed in Part III, Section E: Air Quality

### **References**

See the end of the air quality section for the references

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## **II.B.7c Mobile Source Air Toxics**

### **Background**

The Clean Air Act (CAA) identified 188 air toxics, also known as hazardous air pollutants. The Environmental Protection Agency (EPA) has assessed this expansive list of toxics and identified a group of 21 as mobile source air toxics (MSATs). These are set forth in an EPA final rule, [Control of Emissions of Hazardous Air Pollutants from Mobile Sources](#). The EPA also extracted a subset of this list that FHWA labels as the six priority MSATs, which are:

- Benzene.
- Formaldehyde.
- Acetaldehyde.
- Diesel particulate matter/diesel exhaust organic gases.
- Acrolein.
- 1, 3-butadiene.

While these MSATs are considered the priority transportation toxics, the EPA stresses that this list is subject to change and may be adjusted in future rules.

On February 3, 2006 the US Department of Transportation and the FHWA issued new guidance on when and how to analyze MSATs in the NEPA process for highway projects. The new guidance may be found in their [Interim Guidance on Air Toxic Analysis in NEPA Documents](#).

The FHWA has developed a tiered approach for analyzing MSATs in NEPA documents. Depending on the specific project circumstances, the FHWA has identified three levels of analysis:

1. No analysis is needed for projects with no potential for meaningful MSAT effects.
2. Qualitative analysis for projects with low potential MSAT effects.
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

### **Process**

The Flowchart for the Analysis of MSATs ([Figure 2](#)) provides the steps necessary to determine what level of analysis is required for the proposed project. Each level of analysis requires

differing amounts of documentation and effort, as is indicated in the flowchart. Please see Appendix LL for standard language examples that can be used in the NEPA document.

For a qualitative assessment, the following factors should be considered:

[http://www.in.gov/idem/enviroreview/hwy\\_earlyenviroreview.html](http://www.in.gov/idem/enviroreview/hwy_earlyenviroreview.html)

1. For projects on an existing alignment, MSATs are expected to decline unless vehicle miles traveled (VMT) more than double by 2020 (due to the anticipated benefits of new EPA engine and fuel standards).
2. Projects that result in increased travel speeds (up to 55 mph) will reduce emissions of the VOC-based MSATs (acetaldehyde, benzene, formaldehyde, acrolein, naphthalene, and 1, 3 butadiene); the effect of speed changes on diesel particulate matter is unknown. This speed benefit may be offset somewhat by increased VMT if the more efficient facility attracts additional vehicle trips.
3. Projects that facilitate new development may generate additional MSAT emissions from new trips, truck deliveries, and parked vehicles (due to evaporative emissions). However, these may also be activities that are attracted from elsewhere in the metro region. Thus, on a regional scale there may be no net change in emissions.
4. Projects that create new travel lanes, relocate lanes, or relocate economic activity closer to homes, schools, businesses, and other sensitive receptors may increase concentrations of MSATs at those locations relative to the No Action case.

In addition to the qualitative assessment, the NEPA document must also include a discussion of information that is incomplete or unavailable for a project specific assessment of MSATs impacts, in compliance with CEQ regulations ([40 CFR 1502.22\(b\)](#)) regarding incomplete or unavailable information. It should also contain a summary of current studies regarding the health impacts of MSATs.

If the project requires a quantitative MSAT analysis, the FHWA should be contacted for assistance in developing a specific approach for assessing the impacts of the project. This is a more rigorous approach that attempts to measure the level of emissions for the priority MSATs for each build alternative. If the analysis for a project in this category indicates meaningful differences in levels of MSAT emissions between the build and do nothing alternative, mitigation options should be identified and considered.

#### MSAT Mitigation Strategies

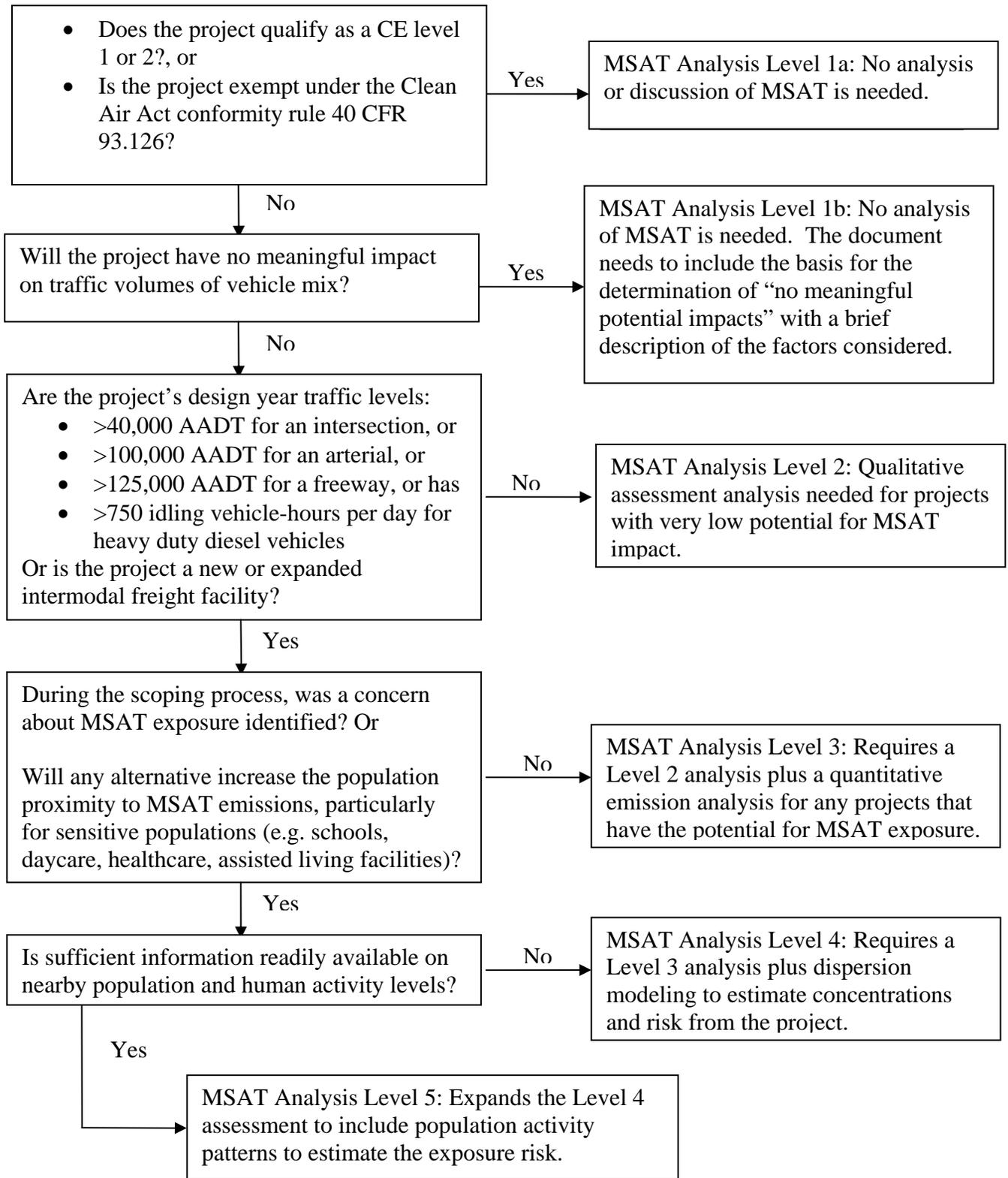
Measures to lessen mobile source air toxic emissions should be considered for projects with substantial construction-related MSAT emissions that are likely to occur over an extended building period, and for post construction scenarios where the NEPA analysis indicates potentially meaningful MSAT levels. Such mitigation efforts should be evaluated based on the circumstances associated with individual projects, and they may not be appropriate in all cases. However, a number of mitigation strategies and solutions are available for offsetting increases in MSAT emissions.

Construction activity may generate a temporary increase in MSAT emissions. Project-level assessments that indicate a need to pursue construction emission mitigation can benefit from a number of technologies and operational practices to help lower short-term MSATs.

Construction mitigation may include strategies to reduce engine activity or reduce emissions per unit of operating time. Technological adjustments to construction equipment (particulate matter traps, oxidation catalysts, or other exhaust treatment devices) and the use of clean fuels, such as ultra-low sulfur diesel, are options to reduce MSAT emissions. The [EPA](#) has listed a number of approved diesel retrofit technologies, which can be used as emissions mitigation measures for equipment used in construction.

Longer-term MSAT emissions can be more difficult to control, as variables such as daily traffic and vehicle mix can be difficult to predict. Operational strategies that focus on speed limit enforcement or traffic management policies may help reduce MSAT emissions. Well traveled highways with high proportions of heavy-duty diesel truck activity may benefit from active Intelligent Transportation System programs, such as traffic management centers or incident management systems. Similarly, anti-idling strategies, such as truck stop electrification, can complement projects that focus on new or increased freight activity.

**Figure 2: Flowchart for the Analysis of Mobile Air Source Toxics (MSAT)**



**Area of Review**

A MSAT analysis should cover all geographic areas that can be impacted by the project.

**Related CE/EA Form Section**

MSATs should be addressed in Part III, Section E: Air Quality.

**References**

Colorado DOT (2006) *CDOT Air Quality Analysis and Documentation Procedures* November 2008

<http://www.dot.state.co.us/environmental/CulturalResources/AirQuality/AirQuality06Revisions.pdf>

EPA (2007) *Green Book* November 2008 <http://www.epa.gov/oar/oaqps/greenbk/index.html>

EPA (2006) *Transportation Conformity Guidance for Qualitative Hot Spot Analysis in PM2.5 and PM10 Nonattainment and Maintenance Areas* November 2008

<http://www.epa.gov/otaq/stateresources/transconf/policy/420b06902.pdf>

FHWA (2006) *Interim Guidance on Air Toxic Analysis in NEPA Documents* November 2008

<http://www.fhwa.dot.gov/environment/airtoxic/020306guidmem.htm>

FHWA (2006) *PM2.5 and PM10 Hot Spot Analyses in Project Level Transportation Conformity Determinations for the New PM2.5 and Existing PM10 NAAQS – Final Rule Summary*

November 2008 <http://www.fhwa.dot.gov/environment/conformity/pmhssum.htm>

FHWA (2006) *Transportation Conformity Reference Guide* November 2008

[http://www.fhwa.dot.gov/environment/conformity/ref\\_guid/chap14.htm](http://www.fhwa.dot.gov/environment/conformity/ref_guid/chap14.htm)

Idaho DOT (2001) *Project Level Air Quality Screening, Analysis and Documentation for Roadway projects in Idaho* November 2008

[http://www.deq.state.id.us/air/data\\_reports/monitoring/roadway\\_projects\\_aq\\_analysis.pdf](http://www.deq.state.id.us/air/data_reports/monitoring/roadway_projects_aq_analysis.pdf)

Illinois DOT (2002) *Special Environmental Analyses – Air Quality Conformity* November 2008

<http://www.dot.il.gov/desenv/BDE%20Manual/BDE/pdf/chap26.pdf>

Indiana Metropolitan Planning Organizations (2002) *What is a MPO?* November 2008

<http://www.indianampo.com>

Tennessee DOT (2007) *Tennessee Environmental Procedures Manual* November 2008

<http://www.tdot.state.tn.us/environment/manuals/EnvironmentalProceduresManual.pdf>

Washington DOT (2007) *Environmental Procedures Manual* November 2008

<http://www.wsdot.wa.gov/Publications/Manuals/M31-11.htm>

FHWA (2008) *Global Climate Change* December 2008

<http://www.fhwa.dot.gov/environment/global.htm>

EPA (2008) *Climate Change* December 2008  
<http://epa.gov/climatechange/index.html>

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## II.B.8 Energy

### **Background**

Energy is consumed in the operation of vehicles and maintenance of facilities, and invested in construction activities as well as in the production of materials used in construction. The majority of projects are not of a scale that would result in significant energy impacts, but the FHWA [Technical Advisory T6640.8A](#) requires that EISs include an assessment of energy impacts. These should include direct as well as indirect impacts. Direct energy use impacts refer to the energy consumed by vehicles using the facility. Indirect impacts include energy consumed during the construction of a project, changes in automobile use of the project area, and others.

### **Process**

The energy section should provide an analysis of existing energy related conditions, including consumption, resource reserves, travel patterns, vehicle-miles of travel, and typical vehicle speeds for each alternative, how the project may directly or indirectly impact these resources and identified impacts will likely be substantial in nature. The analysis should discuss potential changes in energy consumption in a quantitative manner. The energy requirements of the construction of various alternatives (i.e. number of steep grades, frequency of bridges, etc.) are often similar and will generally be greater than the energy requirements of the do nothing alternative. However, the post-construction operational energy requirements of the facility will often be less for the build alternative compared to the do nothing alternative. In such a situation, it might then be concluded that the savings in operational energy requirements would more than offset construction energy requirements and thus, in the long-term, result in a net saving in energy usage.

The final environmental document should identify any energy conservation mitigation measures that shall be implemented as part of the recommended alternative. Examples of energy conservation measures that may be utilized include the use of high-occupancy vehicle incentives, improvements to traffic flow, and pedestrian and bicycle facilities. If a state or regional energy plan is in place, this should include a review to verify that the project is consistent with that plan.

### **Area of Review**

The area of review is the project area and detour routes (if applicable).

### **Related CE/EA Form Section**

This section is not applicable to CEs or EAs.

### **References**

FHWA (1987) *Technical Advisory T6640.8A* November 2008  
<http://www.environment.fhwa.dot.gov/projdev/impTA6640.asp#ener>

CalTrans (1980) *Energy Requirements for Transportation Systems* November 2008  
<http://www.dot.ca.gov/ser/vol1/sec3/physical/ch13energy/EnergyRequirements.pdf>

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## II.B.9 Hazardous Materials and Regulated Substances

### **Background**

Hazardous waste sites are regulated federally by the Resource Conservation and Recovery Act (RCRA, [40 CFR 239-299](#)) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, [42 USC 103](#)). In addition, Indiana has established state-specific regulations under [IAC 327](#) (Water Pollution Control Board, [IAC 328](#) (Underground Storage Tank Financial Assurance Board) and [IAC 329](#) (Solid Waste Management Board). While the laws and regulations were primarily designed to address sites where hazardous waste is generated, treated or stored, they are also important to consider while developing a highway project. Hazardous waste sites can present safety hazards to construction workers and the public, and can become expensive to remediate if not identified early.

### **Process**

During the Red Flag Investigation, known and registered hazardous waste sites are identified by reviewing databases maintained by regulatory agencies such as the Indiana Department of Environmental Management (IDEM) and the US Environmental Protection Agency (USEPA). A one-half mile area surrounding the project is investigated. Neighboring properties should be reviewed during the site field visit to determine whether additional concerns may exist in the project area, which may not have been identified during the database search. These are documented on the Hazardous Materials Site Visit Form (Appendix BB).

If the Red Flag Investigation and site visit form indicate that no hazardous materials-related concerns are present on the project or adjacent parcels, then no further investigation is needed. The Red Flag Investigation and site visit form should be summarized in the environmental document.

If the Red Flag Investigation and site visit indicate potential for concern, a Phase I hazardous materials investigation (also called an Initial Site Assessment) is conducted. The procedure and outline of the Phase I will be defined in the *Environmental Investigation Guideline Manual* (to be completed). This involves a review of suspect properties' history of ownership and use, as well as a more thorough review of regulatory agency records. Known or suspected areas of concern are identified by name and location on a map in reference to the project area. Based on this information an assessment is made as to whether additional precautions are necessary to minimize or mitigate impacts to the project and the environment. The Hazardous Materials Unit will review the Phase I and determine whether enough information is available to make a decision or whether additional, subsurface work is needed to characterize areas of concern. If no further investigation is warranted, then the results of all studies to date should be summarized in the environmental document.

If hazards are suspected but cannot be adequately characterized by the Phase I, a Phase II investigation (also called a Preliminary Site Investigation) may be recommended. This involves subsurface sampling of soil and/or water and laboratory analysis to determine what contaminants, if any, are present in or near the construction limits. The guidelines and outline for the Phase II report will be included in the *Hazardous Materials Unit Operating Manual*. Based on records review and any field investigations, the location and nature of known contamination must be identified. These should be displayed on a site map, with the location of samples clearly identified relative to alternatives being considered. The text of the document should explain the type (liquid, solid, organic, inorganic) and location of any pollutants, as well as the potential for impact to the project. Worker safety hazards should be disclosed, as well as the potential for migration of contamination through runoff, utility trenches or permeable fill (i.e. sand). If mitigation measures are proposed they should be outlined here as well.

If the Phase II reconnaissance cannot be completed prior to approval of the environmental document (due to lack of property access or other concerns), additional investigations to be completed later must be outlined in the Environmental Commitments portion of the document. These must be completed prior to construction so that necessary precautions can be built into the construction quantities and plans.

All hazardous materials investigation reports for INDOT projects should be submitted to OES for review as soon as they are completed. For LPA projects, the local agency or their consultant should submit all hazardous materials documentation with the completed environmental document. For all projects, the results of these investigations should be combined and summarized within the text of the document.

### **Area of Review**

For a Phase I, the area of review for hazardous materials on INDOT projects is the project area and all adjacent properties.

### **Related CE/EA Form Section**

Hazardous waste sites are addressed in Part III, Section H: Hazardous Materials.

### **References**

FHWA (1988) *Interim Guidance – Hazardous Waste Sites Affecting Highway Project Development* November 2008 <http://www.environment.fhwa.dot.gov/guidebook/vol1/doc7g.pdf>

FHWA (1994) *Hazardous Wastes in Highway Right-of-Way* November 2008 <http://www.environment.fhwa.dot.gov/guidebook/vol1/doc7e.pdf>

IDEM (2007) *Hazardous Waste* November 2008 <http://www.in.gov/idem/4995.htm>

USEPA (2007) *Wastes* November 2008 <http://www.epa.gov/epawaste/index.htm>

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## II.B.10 Visual Impacts

### **Background**

Visual perception is an important component of environmental quality that can be affected by transportation projects. Visual impacts of a proposed project can be very important to the public and may be a potential source of public opposition. Because of the public nature and visual importance of transportation projects, both negative and positive visual impacts must be adequately assessed and considered during project development.

Several federal statutes ([\*National Environmental Policy Act of 1969\*](#), [\*Historic Preservation Act of 1966\*](#), [\*Section 4\(f\) of the Department of Transportation Act of 1966\*](#), [\*Highway Beautification Act of 1965\*](#)) include requirements to consider impacts related to transportation projects. Emphasis is given to the consideration of visual impacts to potential viewers of and from the transportation facility and consideration of visual components in a project.

### **Process**

Not all INDOT projects will have a visual impact sufficient to require extensive analysis and discussion. Typically a CE will not require visual impact review. Projects substantial enough to require a detailed analysis and discussion are likely to be classified as an EA or EIS. The most common types of visual impacts that are considered for CE level projects involve Section 106 and/or Section 4(f) resources.

The environmental document should identify the impacts to the existing visual resource, the relationship of the impacts to potential viewers of and from the project, and measures to avoid, minimize, or reduce the adverse impacts. Considerations related to context sensitive solutions, such as design quality, art, and architecture in project planning should be discussed. If features associated with design quality, art or architecture will be included in a project, the environmental document should be circulated to officially designated state and local arts councils, as appropriate. The document should also identify any proposed mitigation for visual impacts of the preferred alternative.

The FHWA publication entitled [\*Visual Impact Assessment for Highway Projects\*](#) provides a detailed guidance on scoping, analyzing and documenting the visual impacts of a project. This publication includes a scoping questionnaire for visual assessments, and guidance on graphic techniques for displaying the visual effects of highways that may be utilized when assessing visual impacts. This guidance should be considered when assessing visual impacts for a project. Please see section [II.B.3.f. Context Sensitive Solutions](#), for more information. In addition, INDOT is in the process of developing a Context Sensitive Solutions/Aesthetics Manual which will provide additional information regarding the assessment of visual impacts and incorporation of visual elements for transportation projects.

### **Area of Review**

The area of review is all areas within the viewshed of the road or that have a view of the road.

### Related CE/EA Form Section

CE documents usually do not include a separate Visual Impacts section. Visual Impacts may be included in the discussion of other sections (e.g. Historic Resources).

### References

FHWA (1987) *Technical Advisory T6640.8a* November 2008

<http://www.environment.fhwa.dot.gov/projdev/impTA6640.asp#vis>

FHWA *Visual Impact Assessment for Highway Projects* November 2008

<http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf>

Code of Federal Regulations (1965) *Highway Beautification Act* November 2008

[http://www.access.gpo.gov/nara/cfr/waisidx\\_02/23cfr750\\_02.html](http://www.access.gpo.gov/nara/cfr/waisidx_02/23cfr750_02.html)

FHWA *Section 4(f)* November 2008 <http://www.environment.fhwa.dot.gov/projdev/pd5sec4f.asp>

ACHP (1992) *Historic Preservation Act of 1966* November 2008

<http://www.achp.gov/NHPA.pdf>

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## II.B.11 Construction Impacts

### Background

The construction of a project has the potential to result in a variety of impacts including construction noise, soil erosion, and temporary and permanent disruption of local travel patterns. Construction impacts should be considered for all projects regardless of the class of document. The FHWA [Technical Advisory T6640.8A](#) provides the foundation for including a discussion of construction impacts in an environmental document and provides a basic guidance regarding this discussion.

### Process

All environmental documents should discuss the potential adverse impacts associated with the construction of each alternative and identify appropriate mitigation and/or minimization measures to address these impacts. The impacts that are most commonly discussed in relation to construction impacts include the following:

- Air quality (open burning and dust control).
- Noise and vibration
- Water quality (erosion control, sedimentation, increased turbidity).
- Maintenance of traffic.
- Residential and commercial access.
- Safety.
- Emergency services.
- School bus routes.
- Disposal of construction material.

- Stock piling of construction material and fill.
- Use of borrow areas.

This list is not all-inclusive; other impacts may need to be examined based on the particular project. The environmental document should include appropriate mitigation and/or minimization measures.

### **Area of Review**

The area of review is within and near the construction limits.

### **Related CE/EA Form Section**

Construction impacts may be relevant to several sections including Part II, Design Criteria for Bridges, Maintenance of Traffic, Right-of-Way and Utility Involvement; Part III, Section A: Streams, Other Surface Waters, Wetlands, Terrestrial Habitat, Karst, Threatened and Endangered Species, Section B: Drinking Water, Flood Plains, Farmland, Section C: Archaeology, Historic Structures, Section D: Section 4(f) Resources/Section 6(f) Resources, Section E: Air Quality, Section F: Noise, Section G: Community Impacts.

### **References**

FHWA (1987) [Technical Advisory T6640.8a](http://environment.fhwa.dot.gov/projdev/impTA6640.asp#const) November 2008  
<http://environment.fhwa.dot.gov/projdev/impTA6640.asp#const>

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## II.B.12 Traffic/Transportation Impacts

### **Background**

The transportation network is composed of various forms of transportation infrastructure, including roads, railroads, sidewalks, trails, parking, transit and others and can include a wide range of transportation modes, including motor vehicles, trains, watercraft, aircraft, public transit, pedestrian movement, and bicycles. Various laws and regulations exist that relate to the impacts to traffic and transportation.

Projects have the potential to create direct and indirect impacts to traffic and transportation both during and after construction and can result in impacts outside of the project limits to other transportation resources. For transportation projects that involve improvements to or creation of a road, the most common impacts involve those to motor vehicles and considerations relating to pedestrians and bicyclists. Road projects typically do not result in impacts to waterborne, rail, or air transportation. The most common impacts to these facilities include the disruption of local or regional access, particularly during construction.

Several statutes ([1991 Inter-modal Surface Transportation Efficiency Act \(ISTEA\)](#), [Transportation Equity Act for the 21<sup>st</sup> Century \(TEA-21\)](#), [23 USC 109\(m\)](#), [23 CFR 652](#)) include requirements to consider the impacts of a transportation project on pedestrian and bicycle traffic and facilities, and consideration of alternatives that avoid or mitigate adverse impacts.

For projects involving the new construction, reconstruction, or modification of a bridge over a navigable water of the U.S., the General Bridge Act of 1946 ([33 USC 525](#), formerly Section 9 of the Rivers and Harbors Act) and implementing regulations require U.S. Coast Guard approval. The purpose of the act is to preserve the public right of navigation and prevent interference with interstate and foreign commerce.

The [Indiana Design Manual](#) and Transportation Research Board's *Highway Capacity Manual* describe how congestion is perceived by motorists using the qualitative and quantitative Level of Service classification system.

### **Process**

The level of analysis for traffic and transportation should reflect the magnitude of the project. The analysis for CE documents will generally be less detailed than that for an EA or EIS. Differences in the level of analysis may include the study area, amount of traffic data, and involvement with intermodal facilities. An EIS should contain a detailed analysis of the transportation network and the impacts resulting from each alternative.

The environmental document should include:

- The existing transportation facility's physical features, existing traffic data, access restrictions, speed limits, etc.
- The existing transportation facility and its relation to the regional transportation network.
- Any existing facilities that have the potential to be directly or indirectly impacted by the project, including intersections, cross streets, detour routes, and other roadways that may experience increases or decreases in the amount of traffic as a result of the project.
- Traffic and level of service data for existing facilities in the various build alternatives and facilities that have the potential to experience changes in traffic as a result of each alternative.
- Past traffic levels, existing traffic levels, and forecast future traffic levels for the transportation network.
- Current and anticipated future uses of existing pedestrian and bicycle facilities, the potential impacts to these facilities and proposed measures to avoid or reduce adverse impacts.

Maintenance of traffic measures should be analyzed to determine how the construction of the project will affect traffic efficiency during construction. Information such as commonly used routes, average trip lengths, and time-of-day comparisons can help to determine these effects. For projects that involve a new facility, the document should compare traffic levels of existing routes in the project area and routes that may experience a change in traffic levels due to the construction of the new facility.

For projects that have the potential to affect other non-motorized transportation facilities, including airports, ports, railroad facilities, etc., the environmental document should include a discussion of the nature of the impacts and provide a quantitative analysis of the impacts. These impacts can include better access to one facility type resulting from improvements to another facility, improvements to one facility (airport) requiring access via another facility (interchange), bridge piers or low clearance in the vicinity of a port or shipping lane, and height restrictions in

the vicinity of airports. Additional coordination may be necessary with agencies with authority if these other modes of transportation are involved.

### **Area of Review**

The area of review is the project area and the surrounding transportation network.

### **Related CE/EA Form Section**

This topic is discussed generally throughout several sections of the CE/EA Form. Specific sections may include community impacts, maintenance of traffic, commitments, and others as needed.

### **References**

National Transportation Library (2004) *Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991* November 2008  
<http://ntl.bts.gov/DOCS/istea.html>

FHWA *Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21)* November 2008  
<http://www.fhwa.dot.gov/tea21/>

FHWA (1987) *Technical Advisory T6640.8a* November 2008  
<http://environment.fhwa.dot.gov/projdev/impTA6640.asp>

*Highway Capacity Manual*. Washington, DC: Transportation Research Board 2000.

INDOT (2005) *Indiana Design Manual* November 2008  
<http://www.in.gov/dot/div/contracts/standards/dm/english/>

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## **II.B.13 Cultural Resources**

### **Background**

Cultural resources are any prehistoric or historic remains or indicators of past human activities, including artifacts, sites, structures, landscapes, and objects of importance to a culture or community for scientific, traditional, religious, or other reasons.

In 1966, Congress passed the [National Historic Preservation Act](#) (NHPA) in order to ensure that the impacts of growth and development are considered in the planning and implementation of federal projects and programs. This Act reflected the nation's growing perception that although modern development may be important and necessary, it too often leads to the loss of something that everyone cherishes - the character of our communities and our cultural roots, as expressed in historic properties. The NHPA sought to preserve community character and cultural roots expressed in historic properties. Section 106 of the NHPA and the associated regulations ([36 CFR Part 800](#)) promulgated by the Advisory Council of Historic Properties (ACHP), requires federal agencies to:

- Take into account the effect of federal undertakings on historic properties.
- Provide the ACHP the opportunity to comment on the undertaking(s).

An undertaking as defined in 36 CFR 800.16(y) means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency. This includes those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license or approval.

In addition, Indiana has several state laws that protect cultural resources, including [IC 14-21-1-18](#) and [IC 14-21-1-26.5](#). [IC 14-21-1-18](#) also requires that a Certificate of Approval be obtained from the State Historic Review Board before impacting a historic structure or site using state funds or on state property. [IC 14-21-1-26.5](#) requires that a development plan be prepared and approved by the Department of Natural Resources' Division of Historic Preservation and Archaeology (DHPA) for any activities disturbing ground within 100 feet of any burial ground. These regulations apply to all projects, even those that are not federal undertakings.

The laws and regulations pertaining to cultural resource protection and management require the Federal Highway Administration (FHWA) to ensure that archaeological and historical work is conducted early in the development of federal undertakings. The results, conclusions, and recommendations of such work are to be integrated into the decision-making process. Often, the Section 106 process is the critical path for completing an environmental document. The Section 106 process can take between 70 days to over a year, depending on the complexity of the project and its impacts. Therefore it is important to begin the process early to avoid delays.

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## **II.B.13.a Professional Qualifications Standards**

### **Background**

The National Historic Preservation Act (NHPA) ([Section 112](#)) and Section 106 regulations [[§800.2\(a\)\(1\)](#)] require agencies responsible for protecting historic properties to ensure that all actions taken by their employees or contractors meet the Secretary of the Interior's Professional Qualification Standards. Those standards are published in Appendix A of [36 CFR 61](#), and may be accessed at the [National Park Service website](#). As of March 1, 2007, individuals must meet the Secretary of the Interior's Professional Qualification Standards to produce Section 106 documentation for any FHWA-funded project in the state of Indiana. Examples of Section 106 documentation include:

- Preliminary Determinations of Areas of Potential Effect.
- Identification of cultural properties including historic property/district reports and archaeological survey/investigation reports.
- Preliminary Determinations of eligibility.
- Preparation of National Register nominations.
- Completion of certain MOA stipulations such as county historic inventories, HABS/HAER documentation, state documentation, and archaeological data recovery (Phase III).

Other Section 106 coordination and preparation efforts, for example inviting consulting parties to consultation, preparing early coordination documents, or drafting a Memorandum of Agreement (MOA), may be conducted by other professional staff. Individuals working under the direct supervision of a qualified professional, such as crew chiefs, field personnel, students, and other support staff, may also continue to assist in the preparation of Section 106 documentation. In such cases, the supervising qualified professional is responsible for the final work product, and must endorse each document with a signature.

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## **II.B.13.b Section 106**

### **Background**

The protection of historic properties and the Section 106 Process are described in [36 CFR 800.4](#). For the purpose of Section 106, historic properties are limited to those that are listed on or are eligible for inclusion on the [National Register of Historic Places](#) (NRHP). Historic properties can include houses, barns, bridges, archaeological sites, and cemeteries. The National Register was established by the NHPA to afford protection to cultural resources (districts, sites, buildings, structures, and objects) of national, regional, state, or local significance. The NHPA created the Advisory Council on Historic Preservation ACHP to advise Congress and the President on matters of historic preservation and to review actions under Section 106.

While [Section 4\(f\) of the USDOT Act of 1966](#) (See section [II.B.14](#)) and Section 106 both provide protection to historic properties they are completely separate laws. Section 106 is a procedural law which requires all federal agencies to evaluate the effect of federal undertakings on historic properties and give the ACHP an opportunity to comment on the undertaking. Unlike Section 106, which applies to all federal agencies, Section 4(f) applies only to activities approved or funded by USDOT agencies.

For a detailed description of each step in the process, refer to the [INDOT Cultural Resources Manual](#).

### **Process**

The essential steps to Section 106 include the following:

1. Determine the Area of Potential Effect (APE) and consulting parties.

In general, the APE should include:

- All alternative locations of the project.
- Locations where the project may result in ground disturbance.
- Locations from which elements of the project may be visible or audible.
- Locations where the project may result in changes in traffic patterns, land use, public access, etc.

2. Determine appropriate Section 106 consulting parties for the project and send Section 106 Early Coordination Letter and packet to consulting parties with 30-day comment period.

For more information regarding the content of the Early Coordination Letter to consulting parties, refer to the [INDOT Cultural Resources Manual](#) or the Sample Section 106 Early Coordination Letter in Appendix P (also see Section I.H [Early Coordination](#)).

3. Determine if any historic properties or archaeological sites are located in the APE.

The environmental document should contain a discussion demonstrating that historic and archeological resources have been identified and evaluated in accordance with the requirements of [36 CFR 800.4](#) for each alternative under consideration. The information and level of effort needed to identify and evaluate historic and archeological resources will vary from project to project as determined by the FHWA after considering existing information, the views of the SHPO and the Secretary of the Interior's [Standards and Guidelines for Archaeology and Historic Preservation](#).

The results of the archaeological reconnaissance investigation should be summarized in the environmental document (including a clear delineation of the area surveyed), along with the final archaeological recommendations. The report should be retained in the file but should not be included in the environmental document. Specific site information must be held as confidential information and not released to the public.

The information that is collected for archeological resources should be sufficient to identify whether each site warrants preservation in place or whether the site is important chiefly because of what can be learned by data recovery. Where archeological resources are not a major factor in the selection of a preferred alternative, the eligibility determination of newly identified archeological resources may be deferred until after circulation of the environmental document. If the eligibility determination is deferred, there should be a commitment made to complete the determination after the circulation of the environmental document.

The environmental study should also include a summary of the historic property work. If the survey finds that no above-ground resources are present in the APE; above-ground resources are present but none are fifty years old or older; or that above-ground resources fifty years old or older are present but do not exhibit enough integrity to warrant a at least a Contributing rating (in other words, the property would warrant a Non-Contributing rating in the Indiana Historic Sites and Structures Inventory system), only a short report in necessary,. For all other projects, a regular historic property report should be completed.

The [INDOT Cultural Resources Manual](#) contains FHWA's step-by-step Section 106 procedures and INDOT's guidelines for the format and content of archaeological and historic property reports.

The environmental document discussion should briefly summarize the methodologies used in identifying historic and archeological resources. Section 4(f) of the USDOT Act applies to the use of historic resources and archaeological resources on or eligible for the National

Register and those archaeological sites which warrant preservation in place. Therefore, the environmental document should describe these resources with respect to these criteria.

The following statement should be included in the commitments of every project: “Should archeological artifacts or human remains be discovered during construction, demolition, or earthmoving activities within the immediate area of the find will stop and the DHPA and INDOT Cultural Resources section will be notified immediately.”

4. Make preliminary determinations of APE, eligibility, and effect finding.

The FHWA or INDOT must make a “Finding of Effect” on all federal-aid undertakings that do not fall under the Minor Projects PA. The public must be given an opportunity to comment on the finding before the NEPA document is completed. INDOT has prepared the [Cultural Resources Manual](#), as well as templates for both the finding and support documentation. Support documentation must accompany the recommendations for effect findings (No Historic Properties Present, No Historic Properties Affected and No Adverse/Adverse Effect).

During this stage, the preparer should determine whether the project falls under categories A or B of the Minor Projects Programmatic Agreement (PA). The PA will rarely be applicable to EA/FONSI or EIS projects. If the project is covered by the Minor Projects PA, steps 5-6 and 8 are not necessary.

The environmental document can serve as a vehicle for affording the Advisory Council on Historic Preservation (ACHP) an opportunity to comment pursuant to Section 106 requirements if the document contains the necessary information required by 36 CFR 800.8. The Draft EIS transmittal letter to the ACHP should specifically request its comments pursuant to 36 CFR 800.6.

5. Review responses from consulting parties and hold Section 106 Consultation Meetings, if necessary.

In the environmental document, include a list of all consulting parties, the date early coordination letters were sent, and the date of response from each consulting party. A copy of the early coordination letter sent to consulting parties should be included in the appendix.

6. Prepare APE, Eligibility Determinations, and Effect Finding along with supporting documentation as outlined in 36 CFR 800.11. This information will be forwarded to INDOT for approval and signature.

Based on the nature of the project, the presence or absence of historic properties, and the correspondence with consulting parties, one of the following determinations must be made:

- No Historic Properties Affected
- No Adverse Effect
- Adverse Effect

If INDOT, in consultation with the SHPO and consulting parties, determines that no historic properties will be affected by the undertaking or that the undertaking will have no adverse effect on historic properties, INDOT will make a finding of either “no historic properties affected” or “no adverse effect”. The documentation will then be forwarded to the SHPO for concurrence.

If the preliminary finding is “Adverse Effect”, INDOT will review the documentation and forward it to the FHWA for signature. Please use the FHWA/INDOT 800.11 documentation templates included in the [INDOT Cultural Resources Manual](#).

The appendix should include any photographs, maps, and drawings, as necessary to provide a complete description of the project's location; copies of all correspondence from the SHPO and consulting parties; and a list of all consulting parties, including SHPO and the FHWA. Remember that only general summary information should be included regarding archaeological investigations and reports.

If a project is covered by the Minor Projects PA, this should be documented within the NEPA documentation. The documentation should reference and include the description of the specific stipulation in the PA that qualifies the project as exempt from further Section 106 review.

7. Distribute INDOT or FHWA-approved APE, Eligibility Determinations, Effect Finding, and the 800.11 documentation to the consulting parties and present to the general public.

For all projects, the APE, Eligibility Determinations, Effect Finding, and the 800.11 documentation should be distributed to consulting parties who responded to the Early Coordination Letter (ECL).

This information should then be presented to the public by the publication of a legal notice in a local newspaper. This notice should briefly describe the project and should state what level of impact is anticipated. A template for preparing legal notices can be found in the [INDOT Cultural Resources Manual](#) (also see Appendix Z). This notice should indicate the legal requirements and a statement that the public has 30 days to respond. The legal notice must be published prior to approval of the environmental document.

8. Make any necessary revisions to the APE, Eligibility Determinations, Effect Finding, and the 800.11 documentation based on consulting party and general public comment.

If any comments are received from the consulting parties or general public during the 30-day comment period, the APE, Eligibility Determinations, Effect Finding, and the 800.11 documentation should be revised accordingly. If the comments received simply concur with the finding, it is only necessary to add them to the appendix. If any issues arise that require further communication, coordinate with the commenting party, and incorporate any changes into the documentation accordingly

The environmental document must demonstrate that all the requirements of 36 CFR 800 have been met. If the preferred alternative has no effect on historic or archeological resources on or eligible for the National Register, the environmental document should indicate coordination with and agreement by the SHPO on this point. If the preferred alternative has an adverse effect on a resource on or eligible for the National Register, the environmental document should contain one or more of the following:

- A determination of adverse effect with concurrence by the Advisory Council on Historic Preservation.
- An executed memorandum of agreement (MOA) resolving adverse effects.
- In the case of a rare situation where the FHWA and the ACHP are unable to agree on terms of the MOA, a copy of comments transmitted from the ACHP to the FHWA, and the FHWA response to those comments.

If there is a violation to the stipulations in the MOA, the Cultural Resources (CR) section of INDOT will contact SHPO and the FHWA to see what needs to be done to correct the violation. This usually results in an amended MOA.

The environmental document should summarize the impacts of each alternative on and proposed mitigation measures for each resource. The document should summarize coordination with the SHPO on the significance of identified historic and archeological resources, the eligibility of historic resources for the National Register, and the effects of each alternative on both listed and eligible historic resources. All coordination with consulting parties should be included in the appendix of the environmental document.

The appendix of the final NEPA document must include the INDOT or the FHWA approval of the APE, Eligibility Determination, and Effect Finding. It also must include any documentation that supports the Effect Finding. If the FHWA has made an “Adverse Effect” finding, a copy of the fully signed Memorandum of Agreement should be included as well. The publisher’s affidavit showing when the legal notice ran should be included in the appendix of the environmental document.

### **Area of Review**

See the [Area of Review](#) at the end of the Cultural Resources Section.

### **Related CE/EA Form Section**

See the [Related CE/EA Form Section](#) at the end of the Cultural Resources Section.

### **References**

See the [References](#) at the end of the Cultural Resources Section.

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### **II.B.13.c Programmatic Agreements (PAs)**

The FHWA/INDOT currently have two active Programmatic Agreements (PAs) approved by the ACHP and the Indiana SHPO: the Historic Bridge PA and the Minor Projects PA. The first PA

is the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Management and Preservation of Indiana's Historic Bridges* (Historic Bridge PA- Appendix Y). The purpose of the Historic Bridge PA is to streamline the Section 106 process for projects involving historic bridges. This PA allows INDOT and local government agencies to manage, define, and plan for bridge projects more effectively with respect to quality, need, time, resources, and cost by using a programmatic approach rather than an individual project-by-project approach.

This PA requires the development and implementation of *Standards for Rehabilitation of Bridges on Low-Volume Roads* in the [INDOT Design Manual](#). These standards are being utilized to evaluate whether rehabilitation of a given historic bridge for vehicular use is feasible and prudent. INDOT is completing a state-wide survey of bridges on public roads and on public rights-of-way that were built in 1965 or earlier. INDOT is gathering appropriate data to develop a historic context for bridges, make NRHP eligibility recommendations, and recommend preservation priorities for historic bridges. The Historic Bridge PA will utilize the historic bridge inventory.

The inventory is expected to be completed in 2009. It will create a prioritization mechanism for Indiana's over 7,000 bridges that are over 50 years old. The inventory will first determine which bridges are National Register-eligible. Of those bridges, criteria will be applied to separate them into two groups known as "Select" and "Non-Select." Select Bridges are those bridges that are considered excellent examples of their type in Indiana and are suitable candidates for preservation. Non-Select Bridges are those bridges that may not be an excellent example of a bridge type or are not suitable candidates for preservation. The Historic Bridge PA outlines project development processes, standard treatment approaches, and documentation standards for Select and Non-Select Bridges.

Under the terms of the Historic Bridge PA, Select Bridges must be preserved. If rehabilitation of a Select Bridge can meet the *Standards for Rehabilitation of Bridges on Low-Volume Roads*, then the rehabilitation option must be implemented. If rehabilitation for continued vehicular use is not feasible, then the by-pass alternative must be evaluated. If the by-pass alternative is not prudent, then the bridge must be preserved at an alternate location. The "Standards for Rehabilitation of Bridges on Low-Volume Roads", which are part of the INDOT Design Manual, evaluate if rehabilitation of a given historic bridge for vehicular use is feasible and prudent. Standards that define "feasibility" relate to the ability of an alternative to meet certain engineering requirements, such as structural capacity. Standards that define "prudent" relate to cost effectiveness of an alternative. Consequently, the data gathered to evaluate if a bridge project meets the "Standards for Rehabilitation of Bridges on Low-Volume Roads" may also be used in 4(f) documentation and the resolution of 4(f) issues. Consult the PA in Appendix Y for further details.

For Non-Select Bridges, the owner must first consider rehabilitation. If rehabilitation is not feasible or prudent, relocation must then be considered. The bridge owner need not retain ownership of the relocated bridge, and should market the bridge to potential new owners by way of a public hearing. Signs should be placed at both bridge approaches for six months, and

INDOT will be provided with the information needed to post the bridge on [INDOT's historic bridge marketing website](#). If no party desires to assume ownership after these efforts, then the bypass and relocation alternatives will be deemed not prudent and the bridge may be demolished. The bridge owner must complete any required photo documentation in accordance with the specifications provided by the Indiana SHPO, prior to demolition.

The second PA is the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation and the Indiana State Historic Preservation Officer Regarding the Implementation of the Federal Aid Highway Program In the State of Indiana* (Minor Projects PA – Appendix X). The Minor Projects PA was established October 12, 2006 between the FHWA, INDOT, SHPO, and the ACHP and has been amended since then. The Minor Projects PA (1) exempts a set of common, minor projects from the Section 106 process, and (2) allows INDOT to make findings of effect (except adverse effect).

Minor Projects are those that have little to no potential to cause effect to historic properties. If a project type, activity, or undertaking is listed in the Minor Projects PA, little or no further cultural resource investigation is needed and the project is exempt from the normal Section 106 process. This process is most suitable for Level-1 Categorical Exclusions (CEs). Rarely, if ever, would the PA be applicable to EA/FONSI or EIS projects.

Most of the minor projects listed in the PA do not require consultation with or review by the SHPO, provided the project:

- Is limited to the activities specified.
- Is not part of a larger project.
- Is on an existing transportation facility.
- Occurs in soils previously disturbed by vertical and horizontal highway construction activities (please note that agricultural activity, such as plowing/disking, does not normally constitute a severe level of disturbance to an archaeology site.)
- Has no known public controversy based on historic preservation issues.

Projects covered by this PA fall into two categories: minor projects that do not require review by INDOT's Cultural Resources Section (CRS) staff (Category A); and minor projects that do require documentation and review by INDOT's CRS staff to assess the likelihood that historic properties exist in the area of potential effects or determine the degree of existing soil disturbance within the project area (Category B).

In general, Category A projects are small in scope, do not include major expansion or alteration of the current roadway footprint, and do not include the addition of new elements (such as light poles, sidewalks, curb ramps, etc.). In general, Category B projects could have a larger scope, could include some expansion or alteration of the current roadway footprint, and could include the addition of new elements, provided they are not located near National Register eligible or listed properties. For Category B, INDOT will return a form to the preparer indicating whether or not the project falls under the PA. The form should be included in the appendix of the environmental document.

Under the Minor Projects PA, all of these common projects are exempt from the normal Section 106 process. It does not exempt a minor project from the normal NEPA process and documentation. The documentation shall reference and include the description of the specific stipulation in the PA that qualifies the project as exempt from further Section 106 review.

The only minor projects that require consultation with, review by, and approval by the SHPO, INDOT and the FHWA are those in category B-6. These should be submitted to INDOT, who will coordinate with the other agencies for approval.

If the project manager, project sponsor, the INDOT District office in charge of the environmental document, and/or the INDOT-CRS determines that the PA applies to a project, then no further work needs to be produced for review under Section 106 by SHPO or the FHWA. If there is a concern about the application of the PA to a specific project, INDOT-CRS should be consulted.

#### **Area of Review**

See the [Area of Review](#) at the end of the Cultural Resources Section.

#### **Related CE/EA Form Section**

See the [Related CE/EA Form Section](#) at the end of the Cultural Resources Section.

#### **References**

See the [References](#) at the end of the Cultural Resources Section.

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### **II.B.13.d Cemeteries**

#### **Background**

State law ([IC 14-21-1-26.5](#)) requires that any person planning to disturb the ground within 100 feet of a burial ground or cemetery for the purpose of erecting, altering, or repairing a structure must submit a development plan to the Division of Historic Preservation and Archaeology (DHPA). This law does not prohibit construction near a cemetery, nor does it prohibit moving cemeteries if the proper permits are acquired. It only requires that developers' plans take into account cemetery locations. It is important to note that the law applies when there is new right-of-way or ground disturbance in previously undisturbed soils. Consequently, maintenance of existing facilities, such as road repair, repaving, or in-kind replacement, does not require a Cemetery Development Plan.

State Law IC 23-14-44-1 restricts road or utility construction through, over, or across any part of the cemetery, without consent of the owner, within 100 feet of the following:

- A space in which burial rights have been transferred.
- A mausoleum in the cemetery.
- A garden crypt in the cemetery.
- A columbarium in a cemetery.

Further, IC 23-14-44-2 gives any person the right to seek a permanent injunction to prevent road or utility construction within a cemetery. INDOT makes every effort to avoid cemeteries completely, and will only move burials if avoidance is not a feasible alternative.

### **Process**

The first step is to determine whether there is a cemetery within the project area. If a cemetery is more than 100 feet from the facility/construction zone, the preparer should include the following commitment: Should any ground be disturbed within 100 feet of a cemetery or burial ground, a Cemetery Development Plan must be submitted to the DHPA. An outline of what is required for a Cemetery Development Plan is available in the [INDOT Cultural Resources Manual](#).

The preparer should keep in mind that the law applies within 100 feet of a single burial or multiple burials; a modern cemetery, a historic unmarked cemetery, or a prehistoric burial mound; or any ground dedicated to *future* human burials. Even a single fragment of human bone, or cremated remains, are considered to be human burials. Many historic or prehistoric cemeteries do not have clear boundaries, and many historic cemeteries are missing standing gravestones, or have gravestones that have been moved from their original location. In these cases, an archaeological contractor should investigate the area to determine the actual cemetery boundaries.

### **Area of Review**

The area of review for Section 106 is the Area of Potential Effect (APE). For cemeteries, the area of review is a 100 foot buffer around the construction limits.

### **Related CE/EA Form Section**

Section 106 and cemeteries are discussed in Part III, Section C: Cultural Resources.

### **References**

FHWA (2005) *Sample format for recommendations for APE eligibility, determination, and effect finding* November 2008 <http://www.in.gov/indot/7287.htm>

NPS (2007) *National Register of Historic Places (National Register)* November 2008 <http://www.cr.nps.gov/NR/index.htm>

INDOT (2007) *Cultural Resources Manual, Programmatic Agreements, and Section 106 forms* November 2008 <http://www.in.gov/indot/7287.htm>

FHWA *Environmental Guidebook* November 2008 <http://environment.fhwa.dot.gov/guidebook/index.asp>

ACHP *Section 106 Regulations User's Guide* November 2008 <http://www.achp.gov/usersguide.html>

Indiana DNR (2007) *Qualified Professionals Roster* November 2008 <http://www.in.gov/dnr/historic/10296.htm>

National Archives and Records Administration (2006) *36 CFR Chapter I* November 2008  
[http://www.access.gpo.gov/nara/cfr/waisidx\\_06/36cfrv1\\_06.html](http://www.access.gpo.gov/nara/cfr/waisidx_06/36cfrv1_06.html)

National Archives and Records Administration (2006) *36 CFR Chapter VIII* November 2008  
[http://www.access.gpo.gov/nara/cfr/waisidx\\_06/36cfrv3\\_06.html#800](http://www.access.gpo.gov/nara/cfr/waisidx_06/36cfrv3_06.html#800)

Office of Code Revision Indiana Legislative Services Agency (2007) *IC 14-21: Historic Preservation and Archaeology* November 2008  
[www.ai.org/legislative/ic/code/title14/ar21/ch1.html](http://www.ai.org/legislative/ic/code/title14/ar21/ch1.html)

INDOT (2007) *Historic Bridge Marketing Program* November 2008  
<http://www.in.gov/indot/6742.htm>

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## **II.B.14 Section 4(f): Historic Sites, Publicly Owned Lands, Wildlife and Waterfowl Refuges**

### **Background**

Section 4(f) of the US Department of Transportation Act of 1966 states that USDOT-funded projects are prohibited from using land from certain properties unless there is no feasible and prudent alternative to the use of the Section 4(f) resource. The proposed action must also include planning to minimize harm to the property that would result from such use. The purpose of Section 4(f) is to protect historic sites and publicly owned park and recreation lands and wildlife and waterfowl refuges. The application of Section 4(f) is documented in an evaluation that is either associated with or contained within the environmental document. The full wording of the provision may be found at [49 USC 303](#) and [23 USC 138](#). On March 12, 2008 FHWA and FTA jointly issued new final Section 4(f) regulations. These changes reorganized and codified the regulations in [23 CFR 774](#). In addition to the regulation, FHWA currently has three guidance documents for applying Section 4(f): the [FHWA Section 4\(f\) Policy Paper](#) (March 1, 2005) , [Guidance for Determining De Minimis Impacts to Section 4\(f\) Resources](#) (December 13, 2005), and [Section 4\(f\) Final Rule: New Guidance on a Complex Regulation](#) (March 2008).

### Section 4(f) properties

Section 4(f) properties are defined by [23 USC 138](#) and the Section 4(f) Policy Paper as “any publicly owned land from a public park, recreation area, of wildlife and waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction thereof, or any land from an historic site of national, state, or local significance as so determined by such officials.” The critical features of this definition are significance and ownership.

Parks, refuges, and recreation areas must be publicly owned in order for Section 4(f) to apply. The official with jurisdiction over the land makes the initial determination of whether the property is significant. The Federal Highway Administration (FHWA) makes an independent evaluation of whether the official’s determination was reasonable. If the official with jurisdiction does not make a determination, the property is presumed to be significant.

The provisions of Section 4(f) apply to publicly owned lands that are administered for multiple uses only if the portion of land to be used is designated by the administering agency as being used for park, recreation, wildlife, waterfowl or historic purposes. This provision also applies if there is a definite formulated plan for such use as determined by the official having jurisdiction over the land. The FHWA will review the determination to assure that they are reasonable. The significance determination is applied only to the lands actually being used for Section 4(f) purposes.

A designated Wild and Scenic River may be protected under Section 4(f) if portions of the river are eligible as historic sites or the river is being used for or is designated for use in an approved or proposed land management plan as a park, recreation area, or wildlife or waterfowl refuge. Adjacent lands may also be eligible for protection. If the management plan does not designate functions or if there is no plan, the preparer must obtain additional clarification from the federal agency that administers the river. See Section II.C.8 for more information on Wild and Scenic Rivers.

Historic sites do not have a public ownership requirement. A historic property is considered to be significant if it is included on or is eligible for inclusion on the National Register of Historic Places (NRHP). The FHWA may also determine that the application of Section 4(f) is appropriate even without NRHP status or eligibility. Section 4(f) may apply to a historic district on or eligible for the NRHP if use of the property adversely affects the integrity of the district.

Section 4(f) also applies to all archaeological sites on or eligible for inclusion on the NRHP, including those discovered during construction, unless FHWA, after consultation with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP), determines that the archaeological resource is important chiefly for the information it contains and has minimal value for preservation in place. The SHPO must indicate that he does not object to the proposed finding. Such archaeological resources which do not warrant preservation in place may be recovered in accordance with a resource recovery plan developed in compliance with Section 106 of the National Historic Preservation Act and approved by the SHPO.

#### Use

Land from a Section 4(f) property may be used directly through occupancy or indirectly through constructive use. Direct use is permanent when the property is permanently incorporated into a transportation facility through fee-simple purchase or permanent easement. Direct use may also result from temporary occupancy of a portion of a Section 4(f) property under certain conditions that are explained in the [FHWA policy paper](#).

A constructive use of land from a Section 4(f) resource occurs if the project does not incorporate land from the Section 4(f) property, but the proximity of the project to the land substantially impairs the activities, features, or attributes of the land that make it eligible for protection under Section 4(f). Constructive uses are rare but should be assessed consistently for each property in the project vicinity. Constructive use is determined by FHWA.

### Feasible and prudent alternatives

The applicant must show that there is no feasible and prudent alternative to the use of the Section 4(f) property. A feasible and prudent avoidance alternative avoids using a Section 4(f) resource and does not cause other severe problems of a magnitude that substantially outweigh the importance of protecting the Section 4(f) property.

Alternatives are **feasible** if they can be built using sound engineering judgment. According to 23 CFR 774.17, an alternative may be not **prudent** if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
  - Severe social, economic, or environmental impacts;
  - Severe disruption to established communities;
  - Severe disproportionate impacts to minority or low income populations; or
  - Severe impacts to environmental resources protected under other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors listed above, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

Consult the [FHWA policy paper](#) and the March 12, 2008 implementing regulations for more information on determining whether an alternative is feasible and prudent. The assessment of the alternatives must be carefully documented in the Section 4(f) evaluation.

### Minimization of harm

If there is no feasible and prudent alternative to using land from a Section 4(f) property, then the project must include all possible planning to minimize harm to the property. This means modifying the design to reduce impacts and mitigation to compensate for remaining impacts. Design modifications and compensatory mitigation vary depending on the kind of Section 4(f) property involved and the severity of the impact to the property.

If there are no feasible and prudent avoidance alternatives, the alternative that creates the least overall harm must be selected. The least overall harm factors to be considered are:

- Ability to mitigate adverse impacts;
- Relative severity of harm after reasonable mitigation (if the harm is substantially equal, this should be documented);
- Relative significance of each Section 4(f) property if there are more than one;
- Views of officials with jurisdiction;
- Degree that purpose and need are met;
- Magnitude of adverse impact to non-Section 4(f) sites;
- Substantial differences in cost of alternatives.

Notice that this determination is not based solely on harm to the Section 4(f) resource.

After avoidance alternatives are considered, the next step is to include all possible planning to minimize harm. This is required for the selected alternative only and consists of consideration of the following:

- All reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse effects must be included in the project;
- No need to look further at feasible and prudent avoidance alternatives;
- Must consult with officials with jurisdiction and obtain their views;
- Whether the costs of the measures is a reasonable public expenditure;
- Any impacts or benefits of the measures to communities or environmental resources outside of the Section 4(f) property.

These steps must be carefully documented in the Section 4(f) evaluation.

### Coordination

The preparer must coordinate with the federal, state and/or local agency officials having jurisdiction over the Section 4(f) lands and the US Department of the Interior (DOI). The official with jurisdiction is typically the landowning agency for public parks, recreation areas, and wildlife and waterfowl refuges. For historic properties, the State Historic Preservation Officer or Tribal Historic Preservation Officer has jurisdiction and must approve the Section 4(f) use. There should also be coordination with the US Department of Housing and Urban Development (HUD) if the property may have received HUD funds and with the US Department of Agriculture (USDA) if the property is a National Forest. In the case of non-federal Section 4(f) lands, the official with jurisdiction must be asked whether there are federal encumbrances on the land, which would occur if the land was federally-owned in the past or has received other federal funds or improvements. Coordination then includes the encumbering federal agency. Consult the [FHWA policy paper](#) for more information on coordination and approval.

### Evaluation and documentation

Many common uses of Section 4(f) land can be documented and evaluated through one of five programmatic evaluations. In addition, very minor uses may qualify for a *de minimis* finding. Uses which are not minor and that do not fall under the programmatic evaluations must be evaluated individually. When deciding whether to apply a programmatic agreement, seek a *de minimis* finding or prepare an individual Section 4(f) evaluation, the preparer should seek guidance from INDOT and FHWA, who will make a recommendation. This recommendation will be based on considerations such as the amount and type of impact, the ability to mitigate impacts, and the net effect on the protected property. The requirements and processes for each evaluation type are described in more detail in the Process sections below. The descriptions include a summary of the type of documentation required to apply each kind of evaluation.

### Exemptions

Certain features and types of projects that are specifically excluded from the requirements of Section 4(f) are listed in 23 CFR 774.13. The preparer should review the list carefully to determine whether the property in question is exempt. The following is a summary of these exemptions:

- Restoration, rehabilitation or maintenance of transportation facilities that are on or eligible for the National Register if a finding of no adverse effect is made and the official with jurisdiction has no objection to the finding of no adverse effect.
- Properties that became eligible for protection under Section 4(f) as a result of designations that occurred late in the development of the proposed action (except archaeological sites).
- Properties that are formally reserved for a future transportation facility which temporarily function for park, recreation, or wildlife and waterfowl refuge purposes in the interim.
- Minimal temporary occupancies.
- Park road or parkway projects as defined under [23 USC 204](#).
- Certain trails, paths, bikeways and sidewalks, in the following circumstances:
  - Trail-related projects funded under the Recreational Trails Program ([23 USC 206](#)).
  - National Historic Trails and the Continental Divide National Scenic Trail.
  - Trails, paths, bikeways, and sidewalks that occupy a transportation facility right-of-way, so long as their continuity is maintained.
  - Trails, paths, bikeways, and sidewalks that are part of the local transportation system and which function primarily for transportation.
- Transportation enhancement projects and mitigation activities that are solely for the purpose of preserving or enhancing an activity, feature or attribute that qualifies the property for Section 4(f) protection, and that are agreed to by the official with jurisdiction.

In addition, the Interstate System is not considered to be a historic site subject to Section 4(f) with the exception of those individual elements formally identified by FHWA for protection. There are no such elements in Indiana.

#### Relation to Section 106 of the National Historic Preservation Act

Information from the Section 106 process may be used in the Section 4(f) process to determine the eligibility of historic properties and archaeological sites; however, other than as stated above, the determination of effect under Section 106 does not determine whether Section 4(f) applies to a particular property. This determination is made independently according to the criteria set out above and in the FHWA guidance. Additionally, mitigation agreements from the Section 106 process are used in some programmatic evaluations for historic properties under Section 4(f). Consult the [INDOT Cultural Resources Manual](#) for more discussion of the relationship between Section 106 and Section 4(f).

#### **Process**

The following process should be completed to analyze Section 4(f) resources:

1. Determine if Section 4(f) resources are present. Provide verification concerning applicability or non-applicability of Section 4(f). Coordinate with the official with jurisdiction over the Section 4(f) resource.
2. Determine whether there is a use of the Section 4(f) resource.
3. In consultation with FHWA, determine whether the impacts require an individual or programmatic evaluation, or a *de minimis* finding.

4. If there is a use that will require individual Section 4(f) documentation, evaluate design variations that would avoid the use to determine whether any are feasible and prudent. If there are any feasible and prudent avoidance alternatives, they must be selected.
5. If the resource cannot be avoided, evaluate measures to minimize harm. In this case the alternative which results in the least overall harm must be selected.
6. Prepare the appropriate evaluation document type with required supporting documentation, including site drawings, photographs, and correspondence.
7. Through OES, submit to the FHWA for review as required by Section 4(f) evaluation type and for environmental document type.

Appendix B of the [FHWA policy paper](#) is a flow chart that illustrates this process in more detail.

If a categorical exclusion (CE) project includes a use that is covered by a programmatic Section 4(f), the preparer should submit a determination of applicability of programmatic Section 4(f) to the appropriate section of OES for review. If satisfactory, OES will forward the documentation to FHWA for approval. FHWA must approve all programmatic and *de minimis* uses for CE-3 documents prior to CE approval. Since all CE 4-level documents must be reviewed and approved by the FHWA, the documentation for an individual Section 4(f) evaluation may be submitted with the completed CE.

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#### **II.B.14.a Individual Section 4(f) Evaluation**

An individual Section 4(f) evaluation is used for complex involvements that do not qualify for *de minimis* or programmatic evaluations. A separate Section 4(f) evaluation should be prepared for each location within the project area where the use of Section 4(f) land is being considered.

The environmental document must contain a summary of the Section 4(f) evaluations for the project. For EISs, this summary is contained in the Section 4(f) chapter of the DEIS. For EAs, the summary is contained in a separate section of the final document. For both EISs and EAs, the evaluation and supporting documentation are contained in an appendix. For CEs, the summary is contained in the Section 4(f) section of the environmental document but the individual evaluation is contained in a separate document. For historic properties, the individual evaluation is attached to the Section 106 documentation.

An individual evaluation is formally circulated to interested parties, including FHWA, as a draft, then provided for the FHWA's approval in final form. The elements of the draft evaluation are a full description of the project and Section 4(f) resource, a demonstration that there is no feasible and prudent avoidance alternative, a discussion of impacts to the Section 4(f) resources, a discussion of all possible planning to minimize harm, and a summary of preliminary coordination with appropriate parties. For some projects, the FHWA may choose to forward the draft to the FHWA's legal affairs office for preliminary comments on legal sufficiency.

The FHWA recommends the following format for Section 4(f) evaluations, based on the FHWA *Technical Advisory* and the March 12, 2008 amendments:

1. Description of the project and proposed action:
  - a. Description of proposed project and explanation of purpose and need
  - b. Construction start and end dates.
  - c. A detailed map or drawing of sufficient scale to identify essential elements of the highway/Section 4(f) land involvement.
  - d. If not otherwise provided:
    - i. Type of NEPA documentation
    - ii. Anticipated project cost
    - iii. Anticipated R/W impacts, overall and specifically to Section 4(f) resources
2. Description of the Section 4(f) resource:
  - a. Size (acres or square feet) and location (maps or other exhibits such as photographs, sketches, etc.) of the involvement.
  - b. Type of property (recreation, historic, etc.).
  - c. Function of or available activities at the property (fishing, swimming, golfing, etc.).
  - d. Description and location of all existing and planned facilities (ball diamonds, tennis courts, etc.).
  - e. Usage (approximate number of users/visitors, etc.).
  - f. Relationship to other similarly used lands in the vicinity.
  - g. Access (pedestrian and vehicular).
  - h. Ownership (city, county, state, etc.).
  - i. Applicable clauses affecting the title, such as covenants, restrictions, or conditions, including forfeiture.
  - j. Unusual characteristics of the Section 4(f) land (flooding problems, terrain conditions, or other features that either reduce or enhance the value of portions of the area).
3. Impacts upon resources (by alternative):
  - a. The location (using maps or other exhibits such as photographs or sketches) and the amount of land (acres or square feet to be used by the proposed project including permanent and temporary easements).
  - b. The probable increase or decrease in environmental impacts (noise, air pollution, visual, etc.) of the alternative locations and designs considered on the Section 4(f) land users.
  - c. A summary table comparing impacts if more than one Section 4(f) property is involved.
4. Demonstration that there is no feasible and prudent avoidance alternative using the information outlined above. This must include sufficient information to evaluate all alternatives which would avoid the Section 4(f) property. Discussions of alternatives may be referenced rather than repeated. However, this section should include discussions of design alternatives (to avoid Section 4(f) use) in the immediate area of the Section 4(f) property.

5. Measures to minimize harm:
  - a. A description of all reasonable and practicable measures which are available to minimize the impacts of the proposed action on the Section 4(f) property. Discussions of alternatives in the draft EIS or EA may be referenced rather than repeated.
  - b. The determination that there is no feasible and prudent alternative is not normally addressed at the draft EIS, EA or preliminary document stage until the results of the formal coordination have been completed.
  - c. If there are no feasible and prudent avoidance alternatives, the alternative that has the least overall harm must be selected and documented using the factors listed above.
6. Description of the results of preliminary coordination with the public official having jurisdiction over the Section 4(f) property and with DOI and, as appropriate for the land in question, USDA and HUD.

If the preferred alternative uses Section 4(f) land, the draft individual Section 4(f) evaluation is then circulated for comment with the official with jurisdiction, the DOI, and other federal agencies as described in the Background section above. A minimum of 45 days is allowed for comments to be returned. If comments are not received within 15 days after the comment deadline, the preparer may assume that there is no objection to the draft individual evaluation. If comments are received, the preparer should address them as appropriate and engage in any additional coordination with appropriate agencies and interested parties to resolve outstanding issues. After all concerns have been addressed, the preparer may compose the final Section 4(f) individual evaluation.

The FHWA *Technical Advisory* recommends the following format for the final Section 4(f) individual evaluation:

1. All information required for a draft evaluation.
2. A discussion of the basis for the determination that there are no feasible and prudent alternatives to the use of the Section 4(f) land. The supporting information must support and contain the following statement: "there are unique problems or unusual factors involved in the use of alternatives that avoid these properties or that the cost, social, economic and environmental impacts, or community disruption resulting from such alternatives reaches extraordinary magnitudes."
3. A discussion of the basis for the determination that the proposed action includes all possible planning to minimize harm to the Section 4(f) property.
4. A summary of the appropriate formal coordination with the DOI, and as appropriate, the USDA and HUD. The draft evaluation is circulated for comments to the federal agencies for a minimum of 45 days.
5. Copies of all formal coordination comments received and an analysis and response to any questions raised. The National Park Service's position on the land transfer should be documented if Section 6(f) land is involved ([see Section 2 B 4](#)).
6. Concluding statement as follows: "Based upon the above considerations, it is determined that there is no feasible and prudent alternative to the use of land from the (Section 4(f) property) and that the proposed action includes all possible planning to minimize harm to the (Section 4(f) property) resulting from such use."

The FHWA will provide this final evaluation to FHWA legal counsel for sufficiency review. If the final evaluation is found to be satisfactory, the FHWA will approve the individual evaluation and the preparer shall incorporate the evaluation in the environmental document.

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#### **II.B.14.b Programmatic Section 4(f) Evaluation**

A programmatic evaluation may be used to satisfy the requirements of Section 4(f) if certain conditions are met. These programmatic evaluations are applied to a narrow set of resources after avoidance alternatives have been found to be not feasible and prudent, and if impacts to the Section 4(f) resource remain even after all possible planning to minimize harm. There are five programmatic evaluations that cover the following: historic sites; historic bridges; parks, recreation areas and wildlife and waterfowl refuges; bikeways and walkways; and net benefit.

The Federal Highway Administration (FHWA) has developed applicability criteria, alternatives, findings, and measures to minimize harm for each programmatic evaluation, which are summarized below. Approval procedures are also provided. These summaries are intended as a quick guide only. The FHWA's guidance documents (see references below) for each programmatic evaluation should be carefully reviewed to ensure that the project and the evaluation document meet the FHWA's full requirements. The environmental document must detail how the project meets the applicability criteria. The documentation needed to support the conclusions required by the programmatic evaluation is comparable to the documentation needed for an individual evaluation. See section II.B.14.a for a list of information that should be supplied with each programmatic evaluation. In order for a programmatic evaluation to be applied to a project, certain findings must be supported by the circumstances, studies, and consultations on the project. Each application of a programmatic evaluation must be reviewed and approved by the FHWA before it takes effect. The approval requirements are very similar for all five programmatic evaluations and may be found in the FHWA guidance for each programmatic evaluation.

The use of the programmatic evaluation and approval is conditioned upon the satisfactory completion of coordination with interested parties. Coordination can facilitate the evaluation of resource values and mitigation proposals and is therefore highly encouraged. Each programmatic evaluation also has specific coordination requirements that are described in the guidance documents. A legal sufficiency review is not required if the project qualifies for a programmatic evaluation. Copies of the final written analysis and determinations required under the programmatic Section 4(f) evaluation shall be provided to the officials having jurisdiction over the involved Section 4(f) area and to other parties upon request. For programmatic evaluations, coordinate as specified in the programmatic.

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## **II.B.14.b.i Programmatic Evaluation for Historic Sites**

### Key applicability criteria

1. The proposed project is designed to improve the operational characteristics, safety, and/or physical condition of existing highway facilities on essentially the same alignment.
2. The historic site involved is located adjacent to the existing highway.
3. The project does not require the removal or alteration of historic buildings, structures or objects on the historic site.
4. The project does not require the disturbance or removal of archaeological resources that are important to preserve in place.
5. The impact on the Section 4(f) site resulting from the use of the land must be considered minor, which means having either a "no effect" or "no adverse effect" under Section 106.
6. The SHPO agrees with the assessment of the impacts of the proposed project on and the proposed mitigation for the historic sites.
7. The project does not require an EIS.

### Alternatives

The following alternatives must be explicitly considered in the environmental document in order to apply the programmatic evaluation:

1. Do nothing.
2. Improve the highway without using the adjacent historic site.
3. Build an improved facility on new location without using the historic site.

### Findings

The FHWA must make a finding as to whether each alternative is feasible and prudent. Findings for historic sites focus on whether the alternatives address current or projected roadway deficiencies and are exceptionally difficult to implement because of high adverse impacts, cost, or engineering difficulty. The effects of these alternatives are compared to the impacts, costs, or other problems that would result from not addressing these needs. This comparison determines whether the effects of the alternatives are truly unusual or unique, or of extraordinary magnitude, when compared with the proposed use of Section 4(f) lands.

### Measures to minimize harm

The FHWA determines whether all possible planning to minimize harm has occurred. This determination is made only if the officials having jurisdiction over the Section 4(f) property have agreed, in writing, with the assessment of impacts resulting from the use of the Section 4(f) property and with the mitigation measures to be provided.

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## II.B.14.b.ii. Programmatic Evaluation for Historic Bridges

### Key applicability criteria

1. The bridge is to be replaced or rehabilitated with federal funds.
2. The project will require the use of a historic bridge structure which is on or is eligible for listing on the National Register of Historic Places.
3. The bridge is not a National Historic Landmark.
4. The FHWA determines that the facts of the project match those set forth in the sections of the document concerning Alternatives, Findings and Mitigation.
5. Agreement among the FHWA, SHPO, and the ACHP has been reached through procedures pursuant to Section 106 of the NHPA.

### Alternatives

The following alternatives must be explicitly considered in the environmental document in order to apply the programmatic evaluation:

1. Do nothing.
2. Build a new structure at a different location without affecting the historic integrity of the old bridge, as determined by procedures implementing the NHPA.
3. Rehabilitate the historic bridge without affecting the historic integrity of the structure, as determined by procedures implementing the NHPA.

### Findings

The FHWA must make a finding as to whether each alternative is feasible and prudent. For historic bridges, these findings focus on whether the alternatives address maintenance or safety deficiencies, are exceptionally difficult to implement because of impact, cost, or engineering requirements, and whether the existing bridge can be rehabilitated without losing historic integrity. More guidance on feasible and prudent alternatives for historic bridges is available in INDOT's [Cultural Resources Manual](#).

### Measures to minimize harm

The FHWA determines whether all possible planning to minimize harm has occurred. The planning to satisfy this requirement increases with the degree to which the historic integrity of the historic bridge is compromised by the project. Mitigation for alterations that lead to a finding of adverse effect under Section 106 is incorporated into the documentation for invoking the programmatic evaluation.

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### **II.B.14.b.iii. Programmatic Evaluation for Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges**

#### Key applicability criteria

1. The project is designed to improve the operational characteristics, safety, and/or physical condition of existing highway facilities on essentially the same alignment.
2. The Section 4(f) lands are publicly owned public parks, recreation lands, or wildlife and waterfowl refuges located adjacent to the existing highway.
3. The amount and location of the land to be used does not impair the use of the remaining Section 4(f) land, in whole or in part, for its intended purpose. The total amount of land to be acquired from any Section 4(f) site does not exceed thresholds provided in the FHWA guidance document.
4. The proximity impacts of the project on the remaining Section 4(f) land shall not impair the use of such land for its intended purpose.
5. The officials having jurisdiction over the Section 4(f) lands agrees with the assessment of the impacts of the proposed project on, and the proposed mitigation for, the Section 4(f) lands.
6. Coordination with and concurrence from the appropriate federal agency is obtained for projects using land from a site purchased or improved with other federal funds, such as the Land and Water Conservation Fund Act.
7. The project does not require an EIS.

#### Alternatives

The following alternatives must be explicitly considered in the environmental document in order to apply the programmatic evaluation:

1. Do nothing.
2. Improve the highway without using the adjacent public park, recreational land, or wildlife and waterfowl refuge.
3. Build an improved facility on new location without using the public park, recreation land, or wildlife or waterfowl refuge.

#### Findings

The FHWA must make a finding as to whether each alternative is feasible and prudent. For parks etc., these findings focus on whether the alternatives address current or projected roadway deficiencies, and are exceptionally difficult to implement because of high adverse impacts, cost, or engineering difficulty. The effects of these alternatives are compared to the impacts, costs, or other problems that would result from not addressing these needs. This comparison determines whether the effects of the alternatives are truly unusual or unique, or of extraordinary magnitude, when compared with the proposed use of Section 4(f) lands.

#### Measures to minimize harm

The FHWA determines whether all possible planning to minimize harm has occurred. This determination is made only if the officials having jurisdiction over the Section 4(f) property have agreed, in writing, with the assessment of impacts resulting from the use of the Section 4(f) property and with the mitigation measures to be provided. Mitigation can include replacement of

land and facilities, restoration or landscaping, special design features to minimize impacts, payment or improvements equivalent to fair market value.

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#### **II.B.14.b.iv. Programmatic Evaluation for Independent Bikeways or Walkways**

An independent bikeway, walkway, or trail facility is one that serves traffic that otherwise would travel on a federal-aid highway. These facilities may also have recreational value. One purpose of this programmatic evaluation is to allow these facilities to be routed through recreational land to serve the recreational aspect of their purpose. This programmatic evaluation, which dates from 1977, differs from the other programmatic evaluations in that it does not require specific alternatives and does not require specific findings or determinations by the FHWA. Preparers seeking to use this programmatic agreement should read the FHWA guidance carefully.

##### Key applicability criteria

1. The project is a bikeway, walkway, or trail facility which requires the use of recreation and park 4(f) properties.
2. The Section 4(f) property is not a wildlife or waterfowl refuge or a historic site and does not have other major impacts, adverse effects, or controversy.
3. The official having jurisdiction agrees in writing with the assessment of effects and proposed mitigation.
4. The project does not require use of critical habitat of endangered species.
5. The facility is not incidental to a highway project that serves motor vehicles.
6. The project does not involve any residential or commercial displacements.

##### Alternatives

Analysis of specific alternatives is not required for the application of this programmatic evaluation.

##### Findings and measures to minimize harm

The FHWA Division Administrator review is required but the guidance does not require specific findings from the FHWA. The guidance for this programmatic evaluation states that FHWA has determined that these projects will not have significant impacts and therefore there is no feasible and prudent alternative to use of Section 4(f) land. Approval by the official with jurisdiction over the Section 4(f) property and funding approval by the FHWA is confirmation that the project has undergone all possible planning to minimize harm.

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## **II.B.14.b.v. Programmatic Evaluation for Net Benefit Projects**

This programmatic evaluation applies to projects that are intended to have a net benefit for a Section 4(f) property. A project has a net benefit when the use of the Section 4(f) property will enhance the property when compared to the effect of doing nothing or of other alternatives.

### Key applicability criteria

1. The proposed transportation project uses a Section 4(f) park, recreation area, wildlife or waterfowl refuge, or historic site;
2. The project includes all appropriate measures to minimize harm and mitigation to preserve, rehabilitate and enhance the Section 4(f) property;
3. For historic properties, there is no demolition or major alterations that would render the property no longer eligible for inclusion in the National Register. For archaeological properties that are important for preservation in place, it does not require the disturbance or removal of these properties.
4. The SHPO must agree to the mitigation for historic properties in an MOA.
5. The officials with jurisdiction over the 4(f) resource agree, in writing, that the measures to minimize harm and mitigation enhance the 4(f) resource and a net benefit to the resource will be achieved.

### Alternatives

The following alternatives must be explicitly considered in the environmental document in order to apply the programmatic evaluation:

1. Do nothing.
2. Improve the transportation facility in a manner that addresses the project's purpose and need without a use of the Section 4(f) property.
3. Build the transportation facility at a location that does not require use of the Section 4(f) property.

### Findings

The FHWA must make a finding as to whether each alternative is feasible and prudent. For net benefit, this analysis focuses on whether purpose and need are met and on the impact to the Section 4(f) resource. In addition, evaluation of the improvement alternative considers whether the alternative benefits the Section 4(f) property. The proposed use of the Section 4(f) property must be communicated at any public hearings and public meetings that are held for the project. The proposed use of the Section 4(f) property should also be mentioned in any public notices published for the project.

### Measures to minimize harm

The FHWA determines whether all possible planning to minimize harm has occurred. This determination is made only if the officials having jurisdiction over the Section 4(f) property has agreed, in writing, with the assessment of impacts resulting from the use of the Section 4(f) property and with the mitigation measures to be provided.

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## **II.B.14.b.vi Environmental Documentation for Programmatic Evaluations**

The application of a programmatic evaluation to a Section 4(f) resource in a particular project is done through the environmental documentation. The procedure required to document the appropriate application of the programmatic evaluation depends on the type of resource and the level of environmental document required for the project as a whole.

### Categorical Exclusions with programmatic application to historic resources

Findings and documentation for the programmatic evaluation are provided with the Section 106 findings and documentation through INDOT to the FHWA. Projects that qualify for the application of the *Minor Project Programmatic Agreement* will have the Section 106 finding made by INDOT before the Section 4(f) evaluation is forwarded to FHWA.

### Categorical Exclusions without programmatic application to historic resources

Once the form and content of the programmatic evaluation is acceptable to the FHWA and after concurrence by the SHPO, the documentation is sent by the FHWA to the ACHP. When the Section 106 process is satisfactorily completed (including an MOA if required), the Division Administrator may then make the determination that the programmatic Section 4(f) applies. The information and documentation that supports the Section 106 and Section 4(f), including an MOA if required, must be provided in the appendices to the CE. The FHWA/INDOT [Section 106 800.11 documentation forms](#) have Section 4(f) language incorporated into the Section 106 language, asking that the SHPO provide written concurrence with FHWA's 4(f) determination.

### Categorical Exclusion with programmatic evaluation of other resources

All documentation for the use of these programmatic evaluations appears in the CE. The documentation that supports the programmatic evaluation is pre-reviewed by the FHWA either as a separate document or as part of a draft CE document. The FHWA's finding on the applicability of the programmatic evaluation is recorded in the CE document and appendices.

### Environmental Assessment

The documentation for application of the programmatic evaluation should be contained in the EA document. The process is the same as described above for CEs.

### Finding of No Significant Impact

A Finding of No Significant Impact should include a summary of information that provided the basis for all Section 4(f) approvals, including programmatic evaluations.

### Environmental Impact Statement

Only historic bridges and net benefit programmatic evaluations may be used within an EIS. All other Section 4(f) uses must be individually evaluated. If the programmatic evaluation will be used within an EIS, all of the information necessary for inclusion in the Section 106 process and programmatic evaluation may be contained in the EIS. The use of the programmatic evaluation is discussed in the Section 4(f) chapter of the EIS. Use of other Section 4(f) resources cannot be addressed through programmatic evaluations in an EIS.

### Record of Decision (ROD)

The ROD should summarize the key information that provided the basis for all Section 4(f) approvals, including programmatic evaluations. This information may be included in the alternatives discussion if appropriate.

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### **II.B.14.c De Minimis Impact Findings**

Under [SAFETEA-LU](#) provisions and March 2008 FHWA regulations, the requirements of Section 4(f) of the Department of Transportation Act will be considered satisfied if it is determined that a transportation project will have a *de minimis* impact on the 4(f) resource in question. A *de minimis* finding subsumes the requirements for all possible planning to minimize harm by reducing the impacts on the Section 4(f) property to a *de minimis* level. A *de minimis* finding may be made for any level of environmental document but it must reference the relevant provisions of Part 774 when findings are made. Key provisions include § 774.3(b), which is the main provision authorizing *de minimis* findings and § 774.17, which includes a definition of “*de minimis*” impact.

For public parks, recreation areas, and refuges a *de minimis* impact finding is appropriate if the transportation use, including consideration of impact avoidance, minimization, and mitigation or enhancement measures, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f). The official with jurisdiction over the property must be informed of the FHWA’s intent to make the *de minimis* impact finding based on their written concurrence that the project will not adversely effect the activities, features, and attributes that qualify the property for protection under Section 4(f) and the public must have the opportunity to review and comment on the effect on the Section 4(f) resource.

For historic properties the *de minimis* impact finding is appropriate when the Section 106 process results in a finding of no adverse effect or a finding of no historic properties affected. The officials with jurisdiction must be informed of the FHWA’s intent to use the *de minimis* impact finding based on their written concurrence in the Section 106 determination and FHWA must have considered the views of the consulting parties. The officials with jurisdiction are the SHPO, the Tribal Historic Preservation Officer (if applicable), and the ACHP, if the ACHP has agreed to be a consulting party in the Section 106 process.

Only FHWA may make a *de minimis* finding. The FHWA/INDOT Section 106 800.11 documentation forms (<http://www.in.gov/indot/7287.htm>) have *de minimis* language written into the Section 106 language to request that the SHPO provide written concurrence with FHWA’s *de minimis* determination.

The *de minimis* impact criteria may be applied to individual Section 4(f) properties involved in any transportation project at any level of NEPA (National Environmental Policy Act) documentation. The evaluation may be applied to temporary use not covered by the temporary occupancy exception criteria but not to constructive use. The provision allows avoidance,

minimization, mitigation and enhancement measures to be considered in making the *de minimis* determination.

*De minimis* findings are documented in a memorandum to the FHWA that clearly describes how the project meets the *de minimis* criteria. Public notice of the finding is required.

For parks, recreation areas, and wildlife and waterfowl refuges, these criteria are as follows:

1. Absence of an adverse effect on the activities, features, and attributes that qualify the resource for protection under Section 4(f),
2. Notification of the owner of the FHWA's intent to make a *de minimis* finding based on the owners written concurrence from the property owner that the use will not have an adverse effect on the above, and
3. Opportunity for public review and comment on the effects of the project on activities, features, and attributes of the resource.

For historic properties, these criteria are as follows:

1. A finding under Section 106 of no adverse effect or no historic properties affected,
2. Notification to the SHPO of the intent to use a *de minimis* approach, and
3. Consideration of the views of Section 106 consulting parties.

The memorandum must include a signature line for FHWA's concurrence and have all supporting documentation attached, including concurrence from SHPO or the owner and proof of public notice. The environmental document should contain a summary of the memorandum and a summary of the approval process. The document should be organized as follows:

1. Project name and Des. Number,
2. Project location, size, and cost
3. Construction start and end date
4. Project description
5. Type of environmental documentation
6. Listing of all Section 4(f) resources use by the project, both *de minimis* and non-*de minimis*, as well as any mitigation measures
7. Listing of all *de minimis* impacts and mitigation
8. Other relevant information.

The signed memorandum and supporting documentation should appear in the appendix. A helpful flowchart of the application and review process appears at the end of the [FHWA guidance document](#).

### **Area of Review**

The area of review is all properties immediately adjacent for permanent and temporary use, and properties in the project vicinity for constructive use.

### **Related CE/EA Form Section**

4(f) resources are discussed in Part III, Section D: Section 4(f)/6(f) Resources; Part II, Other Alternatives Considered; and other sections as appropriate.

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**References**

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FHWA Technical Advisory 6604.8A (1987) *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* November 2008

<http://environment.fhwa.dot.gov/projdev/impTA6640.asp>

49 USC 303 (2006) *Policy on lands, wildlife, and waterfowl refuges, and historic sites* November 2008

[http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse\\_usc&docid=Cite:+49USC303](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+49USC303)

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FHWA (1977) *Section 4(f) Statement and Determination for Independent Bikeway or Walkway Construction Projects* November 2008 [www.environment.fhwa.dot.gov/projdev/4fbikeways.asp](http://www.environment.fhwa.dot.gov/projdev/4fbikeways.asp)

FHWA (1986) *Final Nationwide Section 4(f) Evaluation and Approval for Federally-Aided Highway Projects with Minor Involvements with Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges* November 2008

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FHWA (1983) *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* November 2008

<http://www.environment.fhwa.dot.gov/projdev/4fbridge.asp>

FHWA (2005) *Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property* November 2008

<http://www.environment.fhwa.dot.gov/projdev/4fnetbenefits.asp>

49 U.S.C. 303 (2005) *Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites, as amended by Section 6009 of SAFETEA-LU* November 2008 [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse\\_usc&docid=Cite:+49USC303](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+49USC303)

FHWA (2007) *Questions and Answers on the Application of the Section 4(f) De Minimis Impact Criteria* November 2008 <http://www.fhwa.dot.gov/hep/qasdemimus.htm>

INDOT (2007) *Cultural Resources Manual, Office of Environmental Services* November 2008 <http://www.in.gov/indot/7287.htm>

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## II.B.15 Short-Term Use vs. Long-Term Productivity

### **Background**

The impacts to resources surrounding the project can affect both short-term uses of the environment and the long-term productivity. A discussion of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity should be included in the Environmental Impact Statement (EIS) in accordance with [Section 1502.16](#) of the National Environmental Policy Act (NEPA). Short-term uses of man's environment could include effects from the temporary or permanent use of land, and could include short-term disturbances or benefits to that land and the resources present by the proposed facility or construction. The maintenance and enhancement of long-term productivity could include effects from the temporary or permanent use of land, and could include future maintenance or enhancement of resources impacted by the project, and the long-term productivity of the land/resources impacted by the project. In some instances, short-term disturbances to a resource could lead to long-term reduction of that resource's productivity. In other cases, the long-term impacts of short-term disruptions will be minor. This will depend on the rarity and sensitivity of the resource in question.

### **Process**

The short-term use and the long-term productivity of each resource should be determined by evaluating all of the impacts on each resource. The discussion should include any short-term disturbances to communities, wildlife, habitat, etc., future maintenance of these resources and how they may be enhanced by the proposed project. The discussion should also include any long-term benefits to the environment and whether short-term uses will affect the long-term productivity.

### **Area of Review**

The area of review is the area surrounding the project area, the APE, and any other boundary used in the study to determine resources.

### **Related CE/EA Form Section**

Short-term uses and long-term productivity are not discussed in a CE/EA.

## References

Council on Environmental Quality (1978) *Sec. 1502.16 Environmental Consequences*  
<http://www.nepa.gov/nepa/regs/ceq/1502.htm#1502.16>

FHWA (2006) *NEPA Documentation* July 2007  
<http://environment.fhwa.dot.gov/projdev/pd4document.asp>

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## II.B.16 Irreversible and Irretrievable Commitments

### Background

Impacts to resources affected by the project may be irreversible, and the materials used to build the facility may be irretrievable. Section [1502.16](#) of NEPA requires a consideration of these irreversible and irretrievable commitments of a project. In this context, commitment of resources is defined as a promise to use or take resources. Irreversible and irretrievable resources are those that would neither be renewable or recoverable for other uses in the future.

### Process

To assess whether the loss or use of resources is reasonable and necessary, the commitment of such resources should be balanced against the project's benefits. Resources can include, but are not limited to the following:

- Energy.
- Construction materials.
- Human effort.
- Funds.
- Land use.
- Other resources from both the natural and human environment.

Irreversible and irretrievable commitments of resources associated with the project should be identified and summarized in this section of the environmental document. The discussion should include how much of the resource would be used and whether the use of these resources would be irreversible and/or irretrievable. The justification for the irreversible and irretrievable use of resources may be based on the identified benefits of a project (i.e. improving safety, reducing congestion, reducing travel times).

### Area of Review

The area of review includes the area surrounding the project area, along the APE and any other boundary used in the study to determine resources.

### Related CE/EA Form Section

Short-term uses and long-term productivity only need to be discussed in Environmental Impact Statements (EIS). This does not need to be discussed in the CE/EA.

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## References

Council on Environmental Quality (1978) *Sec. 1502.16 Environmental Consequences* November 2008 <http://www.nepa.gov/nepa/regs/ceq/1502.htm#1502.16>

FHWA (2006) *NEPA Documentation* November 2008  
<http://environment.fhwa.dot.gov/projdev/pd4document.asp>

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## II.C The Natural Environment

### II.C.1 Geological Conditions

#### II.C.1a Geology

##### Background

The geology of a project area involves much more than just the type of bedrock that lies below the surface of a project area. It also includes the study and identification of the various landforms and materials that are located above the bedrock including soils. The type and depth of the bedrock does not strongly influence the design and construction of a project and is not typically considered when identifying, assessing and evaluating the potential environmental impacts associated with a proposed project. However, some special geologic situations, particularly those associated with karst features and wetlands should be considered during the selection of alternative alignments and project locations.

##### Process

For many projects, geologic concerns can include wetlands, karst terrain, coal-mining (both underground and surface), and a legally designated sole source aquifer. These are major concerns and obstacles to be avoided if at all possible. If they cannot be avoided, mitigation for impacts must be included in the design and construction of a project. Information regarding the seismic zones located in the southwestern part of the state, lacustrine plains, very sensitive and uncommon areas such as calcareous peat bogs, fens and marshes should be included in the environmental document as well. They are a concern not only to the preparer of the environmental document, but also to the designer of the roadway or bridge.

The geology of a project area should always be reviewed. Several sources of geologic information include the early coordination response from the Indiana Geological Survey (IGS) and the various types of maps and related publications also prepared and published by the IGS. Should something of a sensitive nature be present, the information should then be incorporated into the environmental document.

##### Area of Review

The area of review is the project limits and surrounding area.

**Related CE/EA Form Section**

Geologic information can be appropriately included in the remarks boxes of Part III, Section A: Ecological Resources or Section B: Other Resources.

**References**

See the end of the geological section for references.

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**II.C.1b Karst Topography and Features****Background**

Karst topography is a landscape made up of distinctive dissolution patterns often marked by underground drainage channels through bedrock which consists predominantly of limestone or dolomite. The most common and well known karst features include sinkholes, swallowholes and caves. Other types of karst features include sinking streams and springs of various sizes.

In Indiana, karst features are typically found within and immediately bordering the physiographic region known as the Mitchell Plain, which is located in the south-central portion of Indiana and has surface and near surface upper-middle Mississippian age carbonate bedrock. Karst features can also be found in other parts of the State, particularly in the Muscatatuck Regional Slope located to the east of the Mitchell plain in southeastern Indiana. The karst features found in this area, however, are generally small, less abundant and geographically isolated. They are also not specifically covered under the 1993 Memorandum of Understanding governing karst features (discussed below).

Geologic mapping is not precise. Therefore the designated Potential Karst Features Area boundary is not intended to be exact and all inclusive. The designated boundary is intended to be used only as a guide to indicate where karst features are likely to be encountered and to make the environmental scientist and engineer aware that such features may be present within or immediately adjacent to the limits of transportation projects in this designated area.

The reason for concern with the proximity of karst features to a construction project is that the ground water in these regions can be just as easily polluted as surface water. Runoff may leave a project site and enter directly into a sinkhole then through a cave or a system of enlarged joints and fractures and then to a well, completely bypassing the normal filtering that occurs in a porous aquifer. Subsurface flow is also more difficult to predict than channelized surface flow.

On October 13, 1993, the Indiana Department of Transportation entered into a Memorandum of Understanding (MOU) with the Indiana Department of Natural Resources, the U.S. Fish and Wildlife Service and the Indiana Department of Environmental Management regarding the establishment of guidelines for the construction of transportation projects in an area designated as "Potential Karst Features Area of Indiana" (See Appendix FF). This designated Potential Karst Features Area covered by the MOU can be seen in Appendix GG. The karst MOU does

not necessarily preclude the need to investigate karst features that are located outside of the designated boundaries should adequate justification be provided.

Local Public Agency (LPA) projects are not specifically covered by the karst MOU, as none of the various LPAs throughout the state were signatories to the MOU. However, it is highly recommended that LPA sponsored projects voluntarily comply with the requirements of the MOU.

### **Process**

When a transportation project is located within the designated Potential Karst Features Area and it is thought that karst features may be directly or indirectly impacted by the project, the terms and conditions of the MOU must be followed. Direct impacts to karst features could include such activities as bridging, capping or filling or anything else which could modify the feature. Indirect impacts could include such activities as causing roadway runoff to enter into the feature, or reducing or eliminating the water that currently enters the feature.

For karst features located outside of the designated Potential Karst Features Area, a karst study may be initiated at the discretion of INDOT, subsequent to consultation with one or more of the signatories of the karst MOU. If a karst study is determined to be necessary, the process is the same as for features located within the area covered by the MOU.

The OES should be contacted if karst features are anticipated within or immediately adjacent to the proposed project, to determine the level of analysis that will be needed. Sinkholes, caves, underground streams and other karst features within and adjacent to the project area should be located using available research as well as on-site field investigations. The study addresses the karst features present in and around the project area and determine their connectivity. The MOU requires that a qualified professional perform a karst study to determine whether or not karst features will in fact be impacted, what the magnitude and severity of the direct and indirect impacts will be and whether or not mitigation will be required.

The results of these studies should be incorporated into a technical report that includes the following:

- A description of the methodology and data sources used to identify karst features.
- Agencies and other experts consulted during the preparation of the karst analysis.
- Photographs and maps of the karst features.
- Drainage areas and land uses of the drainage area for each sinkhole or karst feature.
- Dye-tracing results and/or other geotechnical or hydrogeological information used to determine subsurface flow patterns of the project area.
- Calculations of estimated annual pollutant loading from the roadway and right-of-way drainage for each karst feature/system. Estimates should be developed for pre-construction conditions as well as during construction and post-construction conditions.
- Potential mitigation measures/best management practices (BMPs) that may be applicable and warranted for each karst feature/system.

Additional karst studies may be required during the design phase of a project. Should it be determined that an additional karst study is required to obtain more specific information, the

commitment to do so should be included in the Mitigation, Commitments and Recommendations section of the environmental document.

To the extent possible, the karst study should be initiated and completed during the preparation of the environmental document so that the resultant data and information can be included in the document. The findings and recommendations of the karst report should be summarized within the document, with the full report included in the appendices of the environmental document as deemed necessary. However, the specific locations of any karst features must be redacted in any documentation that is released to the public.

A copy of the completed karst study is provided to the US Fish and Wildlife Service (USFWS), Indiana Department of Natural Resources (DNR) and the Indiana Department of Environmental Management (IDEM) for review and comment. IDEM disseminates information contained in this report as discussed in the MOU to the appropriate local authorities and hazmat teams for their use

The modification of a sinkhole to receive runoff may require a Class V injection well waterway permit. Under existing federal regulations, Class V injection wells are authorized by rule 40 CFR 144 and are regulated by the USEPA. If a Class V injection well will not endanger underground sources of drinking water and if it is in compliance with other Underground Injection Control Program requirements, a permit will not be required. The [Indiana Waterway Permits Manual](#) can be consulted for additional guidance.

### **Area of Review**

The area of review for karst features must be determined on a project by project basis. It is first necessary to determine whether or not the project is located within the area covered by the karst MOU, then whether or not any karst feature(s) exist within and/or immediately adjacent to the proposed project site or further removed, but hydraulically down gradient.

### **Related CE/EA Form Section**

The karst discussion is located in Part III, Section A: Ecological Resources.

### **References**

See the end of the geological section for references.

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## **II.C.1.c Soils**

### **Background**

Soils are predominantly stratified layers composed of various percentages of gravel, sand, clay and silt sized particles along with organic materials. The various types of soils have a wide range of capabilities and limitations with respect to use in construction of a modern transportation system.

Soil types and textures are generally not a concern to the preparer(s) of an environmental document unless special environmental conditions are indicated. Such a special condition would be the presence of hydric soils or soils with hydric inclusions which would likely represent the existence of wetlands.

However, specific soils information could be important to the person analyzing the impacts and costs of the various design alternatives of larger projects. For example, building a new road through an area underlain by deep, highly deformable lacustrine clays may be less desirable than relatively minor improvements to the existing roadway with substandard geometrics and numerous relocations. Other potential items of concern to a designer could include slope stability and erosion potential and whether the soil will support the roadbed or bridge on its own or will a special type of sub-grade treatment be required.

### **Process**

Should information on the soils of a project area be necessary, it can be obtained by an on-site investigation by a qualified person or from the local county soil survey office of the [Natural Resource Conservation Service](#) (NRCS). The information included in the county soil surveys that is of value to both the environmental scientist and the engineer includes data on suitability as construction materials, engineering index information, physical and chemical properties, soil and water features, wildlife habitat suitability, building site development, sanitary facilities suitability and water management data.

### **Area of Review**

The area of review is within and immediately adjacent to the proposed project area, as any anticipated impacts would be localized. In project areas with large amounts of local relief and steep soil covered slopes, the areas both above and below the project area should be included in the review.

### **Related CE/EA Form Section**

Soils information should be placed in Part III, Section A: Ecological Resources, Terrestrial Habitat.

### **References**

Indiana Geological Survey *Indiana Geological Survey Homepage* November 2008

<http://igs.indiana.edu/>

Indiana Geological Survey (2007) *Indiana Geology* November 2008

<http://igs.indiana.edu/geology/index.cfm>

Indiana Geological Survey (1998) *Bedrock of Indiana* November 2008

<http://igs.indiana.edu/geology/structure/bedrockgeology/index.cfm>

Indiana Geological Survey (1997) *Tectonic Features of Indiana* November 2008

<http://igs.indiana.edu/geology/structure/tectonicfeatures/index.cfm>

Indiana Geological Survey (1997) *Compendium of Paleozoic Rock-Unit Stratigraphy in Indiana* November 2008 <http://igs.indiana.edu/geology/structure/compendium/html/index.cfm>

Indiana Geological Survey *Ground Water* November 2008  
<http://igs.indiana.edu/geology/issues/groundwater/groundwater.html>

Indiana Geological Survey (1997) *Freeze Frame* November 2008  
<http://igs.indiana.edu/geology/ancient/freezeframe/index.cfm>

Indiana Geological Survey (1997) *After the Thaw* November 2008  
<http://igs.indiana.edu/geology/ancient/afterthaw/index.cfm>

Indiana Geological Survey (1999) *Flat, but not Dull – Understanding the Glacial Landscape of Central Indiana* November 2008  
<http://igs.indiana.edu/geology/topo/centralIndLandscape/index.cfm>

Indiana Geological Survey *Landscapes of Indiana* November 2008  
<http://igs.indiana.edu/Geology/topo/landscapes/index.cfm>

Indiana Geological Survey (2002) *Karst in Indiana* November 2008  
<http://igs.indiana.edu/geology/karst/karstInIndiana/index.cfm>

Indiana Geological Survey (2002) *Solution Features Characteristic of Karst Terrains* November 2008  
<http://igs.indiana.edu/Geology/karst/karstInIndiana/karstInIndiana02.cfm>

Indiana Geological Survey (2002) *Effect of Structure and Rock Type on Karst Features* November 2008  
<http://igs.indiana.edu/geology/karst/karstInIndiana/karstInIndiana03.cfm>

Indiana Geological Survey (2002) *Contamination of Ground Water in Karst Environments* November 2008  
<http://igs.indiana.edu/geology/karst/karstInIndiana/karstInIndiana04.cfm>

Natural Resource Conservation Service *Natural Resource Conservation Service* November 2008  
<http://www.nrcs.usda.gov/>

USDA (2007) *Web Soil Survey* November 2008 <http://websoilsurvey.nrcs.usda.gov/>

U.S. Geological Survey (2006) *Science in Your Backyard (Indiana)* November 2008  
<http://www.usgs.gov/state/state.asp?State=IN>

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## II.C.2 Wildlife Habitat Impacts

### Background

Wildlife includes both plants and animals. Impacts to wildlife are important because habitat loss, connectivity and quality continue to be threats for all wildlife species. Transportation projects have the potential to impact aquatic and terrestrial habitat directly through right-of-way acquisition and indirectly through habitat modification and fragmentation. Right-of-way acquisition results in a direct loss of acreage and a reduction in habitat size, which in turn affects wildlife. Indirect impacts can include impacts to food resources or interference to essential wildlife functions such as migration, foraging and breeding. For more information on this see the Indiana Department of Natural Resources' [Indiana Comprehensive Wildlife Strategy](#). Sections on [water quality](#), [threatened and endangered species](#) and [wetlands](#) within this manual are also relevant to the consideration of fish and wildlife issues.

Issues pertaining to wildlife and their habitats consist of habitat flora & fauna (vegetation and animal life occurring in a particular area), habitat fragmentation (discontinuities in an organism's preferred environment), wildlife crossings (reconnect habitats, allowing animals to cross roads safely), invasive species (non-indigenous species that adversely effect the habitats they invade), migratory birds (birds that undertake regular seasonal journeys) and non-wetland wildlife habitat.

There are regulations that require the consideration of wildlife impacts for transportation projects. These include the National Environmental Policy Act ([NEPA](#)), the National Forest Management Act ([NFMA](#)), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users ([SAFETEA-LU](#)), the [Fish and Wildlife Coordination Act](#), [Executive Order 13112](#), and the Migratory Bird Treaty Act ([MBTA](#)). NEPA requires an analysis of impacts to wildlife and their terrestrial habitat for all federal undertakings, including all federally-funded transportation projects. The primary goal of the NFMA ([16 USC 1604 \(g\)\(3\)\(B\)](#)) is to maintain multiple use and species diversity on federal forest lands. The NFMA applies directly to lands administered by the U.S. Forest Service (USFS), but also provides direction for the Bureau of Land Management (BLM) land management plans.

[SAFETEA-LU](#) requires the Secretary of Transportation to conduct a Wildlife Vehicle Collision Reduction Study to assess methods to reduce collisions between wildlife and motor vehicles. A manual of best practices will be developed and training will be offered to transportation officials to help reduce the amount of collisions.

The Fish and Wildlife Coordination Act ([16 USC 661-667](#) (e)) authorizes the U.S. Fish and Wildlife Service to investigate all proposed federal actions (and non-federal actions requiring a federal permit), which would impound, divert, deepen, or otherwise control or modify a stream or other body of water and to make mitigation or enhancement recommendations. The primary goal of this act is to incorporate wildlife conservation with water resource development programs.

[Executive Order 13112](#) (Invasive Species) requires federal agencies not to participate in actions that are likely to cause or promote the introduction or spread of invasive species unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination

that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

The MBTA ([16 USC 700-719](#)) makes it unlawful to take, import, export, possess, sell, purchase or barter any migratory bird, with the exception of the taking of game birds during established hunting seasons. In addition to providing protection for the birds themselves, the law also applies to feathers, eggs, nests and products made from migratory birds. In this context, “take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture or collect, or any attempt to carry out these activities.” “Take” does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs or parts thereof. Transportation projects that have the greatest potential to impact birds protected under the MBTA include clearing of right-of-way and bridge maintenance and reconstruction.

Indiana regulations for wildlife include several state laws relating to biodiversity. Some of the regulations pertaining to wildlife include the following; [IC 14-22-34](#) (Nongame and Endangered Species Conservation), [IC 13-12-4](#) (Indiana Environmental Policy Act and state environmental impact statements), and [IC 14-22-25-2](#) (exotic animal species). Information on the [regulation of exotic and invasive plants](#) is available through the Indiana Department of Natural Resources.

In order to demonstrate compliance with each of these laws, the environmental document should include information that ensures sensitive biological resources like wildlife are identified, considered and protected in the final project design. The following section provides a recommended process to ensure adequate protection of wildlife and their habitat.

### **Process**

During the site visit the basic characteristics of each habitat community, including the representative flora and fauna species, are identified. Amphibians, reptiles, birds, small and large mammals, aquatic organisms, and terrestrial and aquatic vegetation should all be included in the identification and included on the Ecological Assessment Form (Appendix CC). These communities should be described in the environmental document. Photographs and maps with the identified communities should be included in the appendix of the environmental document.

Any biological field surveys that are completed should be summarized as well. This includes the [Qualitative Habitat Evaluation Index](#) (QHEI), the [Headwater Habitat Evaluation Index](#) (HHEI), and the Ecological Assessment Form (Appendix CC). For more information on these surveys, contact the Office of Environmental Services (OES) Ecology Unit.

The potential for core forest impacts and habitat fragmentation should also be discussed in the environmental document. Descriptions of core forest impacts should include a quantitative measurement of the change in core forest available as a result of the project. It should also describe, to the extent practicable, the impact that this change will have on wildlife communities in the area (such as changes in nesting patterns). The discussion of fragmentation should address the potential for increased collisions between motor vehicles and wildlife and any proposed measures to mitigate these impacts, such as wildlife crossings.

Various state agencies, including the DNR, require the consideration of wildlife crossings for projects that have the potential to fragment habitat. Wildlife crossings can take many forms, including pipes, box culverts, underpasses, overpasses, fencing, directional devices and traffic control. Motorist safety, connectivity of habitat and cost are important factors that must be considered and discussed in the environmental document. If DNR responds to early coordination indicating that wildlife crossings should be considered for an INDOT project, the OES Ecology Section should be contacted to make a project-level determination as to whether a crossing is appropriate.

Invasive species that are identified within or adjacent to the project area could be of concern and should be discussed in the environmental document. Consultation with stakeholders should be initiated to identify potential impacts and control measures or mitigation. Possible mitigation methods include the inspection and cleaning of construction equipment; commitments to ensure the use of invasive-free mulches, topsoil and seed mixes; and eradication strategies should an invasion occur as a result of the project.

Migratory birds located within or adjacent to the project area must be identified in the environmental document. If a project has the potential to result in a take of birds/nests protected under the MBTA, a [take permit](#) from the US Fish and Wildlife Service (USFWS) office with local jurisdiction will be required. The removal of inactive nests of migratory birds should not be attempted prior to consultation with the USFWS.

Mitigation may be required for any project that has the potential to negatively impact vegetation or wildlife. The selection of mitigation measures to be implemented should be based on the value of the resources impacted, the severity of the impact and the scope of the project. Any mitigation or recommendations received during early coordination should be incorporated into the environmental document. Mitigation measures may include the replacement of impacted habitat, use of specialized construction techniques, incorporation of wildlife crossings, adjustment of alignments, etc. Efforts to avoid minimize and mitigate project impacts should be discussed in the environmental document and included in the list of commitments.

### **Area of Review**

The area of review includes the area located within and adjacent to the project area. For those projects that may impact critical habitat as deemed by other resource agencies, the area of review will have to be determined on a case-by-case basis.

### **Related CE/EA Form Section**

Terrestrial Habitat and Wildlife Impacts are discussed in Part III, Section A: Ecological Resources. In addition, biological assessment forms should be completed and attached in the appendices.

### **References**

FHWA (2005) *Memorandum: Federal-aid Eligibility of Wetland and Natural Habitat Mitigation* December 2008 <http://www.fhwa.dot.gov/ENVIRONMENT/wetland/wethabmitmem.htm>

FHWA (2007) *Wildlife Protection and Habitat Connectivity* December 2008  
<http://www.fhwa.dot.gov/environment/hconnect/index.htm>

U.S. FWS (2003) *Fish and Wildlife Service Manual* December 2008  
<http://www.fws.gov/policy/724fw2.html>

Indiana Code (2007) *IC 14-23-4-1 (State Forest Management)* December 2008  
<http://www.in.gov/legislative/ic/code/title14/ar23/ch4.html>

Indiana Code (2007) *IC 13-12-4 (Environmental Impact Statements)* December 2008  
<http://www.in.gov/legislative/ic/code/title13/ar12/ch4.html>

Indiana Code (2007) *IC 15-3-5 (Control of Johnsongrass)* December 2008  
<http://www.in.gov/legislative/ic/2004/title15/ar3/ch5.html>

Indiana Code (2007) *IC 14-22-25-2 (Importation Permit)* December 2008  
<http://www.in.gov/legislative/ic/code/title14/ar22/ch25.html>

Indiana Department of Natural Resources *Exotic and Invasive Plants* (December 2008)  
<http://www.in.gov/dnr/entomolo/6121.htm#PLANTSOFFREGULATORY>

D.J. Case and Associates (2005) *The Indiana Comprehensive Wildlife Strategy* December 2008  
[http://www.djcase.com/incws/manuscript/FINAL\\_CWS\\_MANUSCRIPT.pdf](http://www.djcase.com/incws/manuscript/FINAL_CWS_MANUSCRIPT.pdf)

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## II.C.3 Impacts upon Threatened and/or Endangered Species (TES)

### II.C.3.a Federal TES

#### Background

The [Endangered Species Act \(ESA\) of 1973](#) requires federal agencies to use their authorities to carry out their programs for the conservation of endangered species and their critical habitat. Section 7 of the Act requires that federal agencies (or agencies using federal funds) assist in the conservation of federally listed TES and, in consultation with the US Fish and Wildlife Service (USFWS), ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat.

For the purpose of ESA, the term species includes any species or subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature. A candidate species is a plant or animal species for which the USFWS or National Oceanic & Atmospheric Administration (NOAA) Fisheries has on file sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened. The term endangered refers to an animal or plant species in danger of extinction throughout all or a significant portion of its range. A threatened species is an animal or plant

species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

The Bald Eagle was removed from the Federal Threatened and Endangered Species list as of August 8, 2007. The Bald Eagle will continue to be protected under the [Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act](#), which prohibit the take and disturbance to nesting eagles. The final rule ([50 CFR 17](#)) on the delisting provides an explanation of the delisting, and a draft Post-Delisting and Monitoring Plan. The Office of Environmental Services (OES) should be contacted if a take of a Bald Eagle is anticipated.

### **Process**

As a part of the early coordination process, the USFWS (for federal TES) indicates the possible presence of endangered species or habitat suitable for such species. For federally-listed species, the early coordination response from the USFWS indicates the anticipated level of impact upon TES; this should be stated in the environmental study. A “No Effect” determination is issued when no species expected to be present have the potential to be impacted. The response of “May affect-is not likely to adversely affect” is given for effects that are expected to be discountable, or insignificant, or completely beneficial. The last response that the USFWS may give is “May affect-is likely to adversely affect” which requires continued informal and possibly formal consultation with the USFWS, if the early coordination response indicates that a listed species or a designated critical habitat may be present, a biological assessment (BA) may be required to identify whether any such species or habitat will be adversely affected by the project. The USFWS determines whether a BA is necessary. For Environmental Impact Statement (EIS) level projects, BAs are often required. The BA should include the following:

- An on-site inspection of the area affected by the proposed project.
- Interviews with recognized experts on the species at issue.
- Informal consultation with the USFWS during evaluation.
- A literature review to determine the species distribution, habitat needs, and other biological requirements.
- Exhibits showing the location of the affected areas of the proposed project.
- An analysis of possible impacts to the species.
- An analysis of measures to minimize impacts.

The BA should contain the best available scientific and commercial data available concerning the impact of the proposed project on listed species or designate critical habitat. All BAs should be submitted to the Office of Environmental Services for review.

Upon completing their review of the BA, the USFWS may request additional information and/or a conference to discuss the project. They may also issue a Biological Opinion stating an effect determination such as:

- “No Effect” determination which would be stated in the environmental document.
- “May affect-is not likely to adversely affect” will be given for effects that are expected to be discountable, or insignificant, or completely beneficial.
- “May affect-is likely to adversely affect” which would require continued informal and possibly formal consultation with USFWS.

If either a finding of "No Effect" or "Not likely to adversely affect" is given, the requirements of the Endangered Species Act are met. Projects resulting in formal consultation with USFWS or "Likely to adversely effect" will require a higher level of environmental documentation (Categorical Exclusion - 3 or higher). In selecting a preferred alternative, a finding of jeopardy ("May effect-is likely to adversely effect") to an endangered or threatened species and/or critical habitat must be avoided. To the fullest extent possible, the document needs to identify feasible and prudent alternatives to avoid jeopardizing the continued existence of the species. No project may receive federal approval with a finding of jeopardy unless an exemption is granted.

Once the USFWS determines the data in the Biological Assessment is complete, the USFWS has 135 days to issue a Biological Opinion concerning the Biological Assessment. If a No Jeopardy Biological Opinion is given, then Section 7 is concluded. Any conditions included in the Biological Opinion must be complied with. If a Jeopardy Opinion is issued, and no exemption granted, federal aid is denied. To the fullest extent possible, the Biological Assessment needs to identify feasible and prudent alternatives to avoid the jeopardy to such species or habitat.

The environmental document needs to contain, to the fullest extent possible:

- A summary of the biological assessment (see above).
- A summary of the steps taken, including alternatives or measures evaluated and conferences and consultations held to resolve the project's conflicts with the listed species or critical habitat.
- A copy of the Biological Opinion.
- A request for an exemption from the Endangered Species Act.
- The results of the exemption request.
- A statement that (if the exemption is denied) the action is not eligible for federal funding.

Include any suggestions from resource agencies (USFWS, IDNR) in the commitments and on the Commitment Summary Form.

Occasionally a plant or animal will be removed or re-designated on the TES list. Any new plant or animal re-designation should be explained in the environmental document. If the plant or animal is still protected by other statutes or regulations, these should be mentioned as well. The following is an example for the Bald Eagle. Similar standard language should be included when a plant or animal is removed or re-designated on the TES list.

*The Bald Eagle was removed from the Federal Threatened and Endangered Species list on August 8, 2007. The Bald Eagle is still protected under the [Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act](#), which prohibits the take and disturbance of nesting eagles.*

It is necessary to obtain the appropriate federal and/or state permit when working with endangered and threatened species. Contact the USFWS for further information in these cases.

**Area of Review**

The area of review is the project area and surrounding habitat that could be affected by the project.

**Related CE/EA Form Section**

Threatened and endangered species are discussed in Part III, Section A: Ecological Resources.

**References**

USFWS *Endangered Species Act* December 2008

<http://www.fws.gov/endangered/pdfs/ESAall.pdf>

USFWS (1998) *Section 7 Consultation Handbook* December 2008

<http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm>

FHWA (2005) *Environmental Guidebook: Endangered Species* December 2008

<http://www.environment.fhwa.dot.gov/guidebook/chapters/v1ch4.asp>

USACE (2007) *Endangered Species & Essential Fish Habitat* December 2008

[http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage\\_ESA](http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_ESA)

USFWS (1997) *Bald Eagle Soars of Endangered Species List* December 2008

<http://www.fws.gov/migratorybirds/baldeagle.htm>

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**II.C.3.b State TES****Background**

Indiana Law [IC 14-22-34](#) protects species that have a limited abundance or distribution or those species in danger of extinction. This law prohibits the taking, possession, transport, export, process, sale, or offer to sell non-game species. Take is defined as the harassment, hunt, capture, or kill; or the attempt to harass, hunt, capture or kill.

Endangered species are defined to mean any species or subspecies of wildlife whose prospects of survival or recruitment within Indiana are in jeopardy or are likely within the foreseeable future to become so due to any of the following factors:

1. The destruction, drastic modification, or severe curtailment of the habitat of the wildlife.
2. The over-utilization of the wildlife for scientific, commercial, or sporting purposes.
3. The effect on the wildlife of disease, pollution, or predation.
4. Other natural or manmade factors affecting the prospects of survival of recruitment within Indiana.
5. Any combination of the factors described in subdivisions 1-4.

**Process**

Early coordination responses from the Indiana Department of Natural Resources (DNR) should indicate the presence of state-listed TES in the project area. Red Flag Investigations should also indicate whether or not state TES are within the project area.

The environmental document should include a list of the known state TES and whether any have been reported in the vicinity. Any mitigation for impacts to state TES should be discussed as well. Include suggestions from the DNR in the commitments section and on the Commitment Summary Form. Information regarding the location and identification of state TES may not be shared with the public – do not include this information in the environmental document.

**Area of Review**

The area of review includes the project area, and surrounding habitat that could possibly be affected by the project.

**Related CE/EA Form Section**

TES are discussed in Part III, Section A: Ecological Resources.

**References**

Indiana Code (2007) *IC 14-22-34 (Nongame and Endangered Species Conservation)* December 2008 <http://www.in.gov/legislative/ic/code/title14/ar22/ch34.html>

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**II.C.4 Water Quality Impacts****II.C.4.a Surface Water and Ground Water****Background**

Surface water resources are those that have some ground surface exposure and include such features as rivers, creeks, ditches, natural lakes, reservoirs, ponds, open wells, some wetlands and detention/retention basins. Surface waters are highly vulnerable to immediate and direct contamination resulting from a long list of possible sources; including roadway construction, farming and industrial activities.

The US Army Corps of Engineers (USACOE) has established its regulatory jurisdiction over water resources considered to be Waters of the U.S. To determine whether or not a water body is subject to regulation as a Water of the U.S., a jurisdictional determination (JD) must be made by the USACOE. The JD takes into consideration all aquatic resources that are subject to waterway permits. This determination can be obtained during the early coordination process during preparation of the environmental document or as late as the design of the proposed project. More specific guidance can be found in the INDOT [Indiana Waterway Permits Manual](#).

Ground water is estimated to provide more than two thirds of the state's drinking water, and up to 72 percent of Indiana's residents rely on ground water resources for both drinking and

household use. Ground water resources are composed of aquifers contained in and passing through various types of both solid and unconsolidated materials, as well as underground rivers and streams and, less commonly, underground reservoirs. Ground water resources, as with surface water resources, are extremely vulnerable to contamination and degradation from pollutants commonly associated with farming, industry, human habitation and construction.

### **Process**

The environmental document should include a description of all known sources of water, both surface and subsurface located within and adjacent to the proposed project. The DNR, Division of Water and IDEM, Office of Water Quality are two sources for information on ground water, surface water and drinking water. Coordination with the Environmental Protection Agency (EPA) and the USACOE under the *Federal Clean Water Act* may also provide useful information. It is a good idea to coordinate with the EPA on CE level projects when it is likely that a water quality issue is associated with the project area.

Any project that may impact potential waters of the U.S. requires a USACE-approved JD. The draft JD form is prepared by INDOT's Ecology Unit or an environmental consultant, subject to INDOT review and approval. Any questions regarding which JD form to use should be directed to the Ecology Unit. The Ecology Unit transmits all draft JD forms to the appropriate USACE district so that the agency can make a determination of jurisdiction regarding any potentially impacted wetlands, streams, rivers or ditches in the project area. The document preparer, having this information in hand during the preparation of the environmental document, should then know whether any mitigation efforts will be required as per the regulations of the USACOE (for Waters of the U.S) or Indiana Department of Environmental Management (IDEM) (for Waters of the State).

Sources of information used for a waters determination, in addition to the actual field visit and site analysis and available on-line information, include USGS quadrangle maps and county soil survey manuals. A solid or dashed blue line on a U.S. Geological Survey (USGS) quadrangle map generally indicates a water of the U.S. All non-blue-line waterways that pass through or enter onto an INDOT project site should also be field-checked to see whether there is an ordinary high water mark (OHWM) which would indicate that there is enough water passing through the channel to prohibit the growth of vegetation. If an OHWM exists, the channel is typically considered to be a jurisdictional water of the U.S. If a waterway enters onto INDOT right-of-way and is captured by INDOT side ditches, pipes, or other drainage features; it is necessary to investigate whether that source of the water has an OHWM and other features that would make it a jurisdictional water of the U.S.

Summaries of all analyses performed by and consultations with all agencies responsible for water quality should be included in the environmental document. The discussion portion of the document should describe the existing conditions of all potentially impacted streams, aquifers and other bodies of water, and identify the potential impacts for all of the design alternatives. Normally, available published water quality data will be sufficient to describe the existing conditions. The inclusion of water quality data spanning several years would be beneficial if water quality trends can be shown. Measures to avoid minimize or mitigate impacts should also be discussed.

**Area of Review**

The area of review is within and adjacent to the project area.

**Related CE/EA Form Section**

Surface and ground water impacts are discussed in Part III, Section A: Ecological Resources and in Section B: Other Resources (Drinking Water Resources).

**References**

See the end of the water quality section for references.

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**II.C.4.b Drinking Water****Background**

Drinking water is ground or surface water which is of a high enough quality either to drink directly from the source or with some amount of filtration and/or chemical treatment. The protection of all sources of drinking water is very important because once a source is contaminated, it is nearly impossible to once again make it potable. Some contaminants can render water unfit to drink in very low concentrations. It is always much less expensive to prevent the contamination of a drinking water resource than it is to treat the water after contamination has taken place.

**Process**

The environmental document should include a description of all known sources of drinking water located within and adjacent to the project area. Summaries of any analyses and agency consultation should be included in the environmental document.

Information on drinking water, ground water and surface water can be obtained from numerous sources including the owner of the property who may have independent laboratory testing information as well as general knowledge and historical background information, the Indiana Department of Natural Resources ([DNR](#)) - [Division of Water](#), [U.S. Geological Survey](#), Indiana Department of Environmental Management ([IDEM](#)) - [Office of Water Quality](#) and [local health departments](#).

Information from these sources should be included in the early coordination letters as well as in the appropriate sections of the environmental document. Any analysis of the information obtained from the preceding sources should be performed by those with the experience and expertise from the previously listed agencies as well as the US Environmental Protection Agency (EPA) who should be contacted when water quality impacts may be an issue. The confidentiality requirements which may apply to discussions of surface and ground water sources apply to drinking water discussions as well for the same reasons.

### **Area of Review**

The area of review is within and adjacent to the project area.

### **Related CE/EA Form Section**

Drinking water impacts are discussed in Part III, Section B: Other Resources (Drinking Water Resources).

### **References**

See the end of the water quality section for references.

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## **II.C.4.c Sole Source Aquifers**

### **Background**

An aquifer is a natural underground bed or layer of earth, sand, gravel, porous or fractured stone that has the ability to receive, store and transmit water. A sole source aquifer (SSA) is one that is the sole or principal drinking water source for an area and, if contaminated, would create a significant hazard to public health. The Environmental Protection Agency (EPA) specifically defines a sole or principal aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source if their primary source were to be rendered unusable.

The Sole Source Aquifer Protection Program was authorized by Section 1424(e) of the [Safe Drinking Water Act \(SDWA\)](#) (Public Law 93-523, [42 U.S.C. 300](#) et seq.). It states the following:

*If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principle drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice, no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer.*

In Indiana, there is only one legally designated sole source aquifer, the St. Joseph aquifer. It is located in the very northernmost central portion of the state which includes portions of St. Joseph, Elkhart, LaGrange, Kosciusko and Noble Counties. The approximate boundaries of this aquifer can be seen in Appendix II.

In April of 1989, the EPA and the Federal Highway Administration (FHWA) entered into a Memorandum of Understanding (MOU) regarding any federally-funded projects within the designated boundaries of the St. Joseph aquifer. The goal of the MOU was to ensure that federal-aid highway projects located within the designated sole source aquifer area are designed, constructed and maintained in a manner that will prevent the introduction of contaminants into the aquifer in quantities that may create a significant hazard to public health. The MOU was prepared to serve two primary purposes. The first was to set forth the types of projects that will require review. The second was to describe the notification and review procedures that will be employed. This MOU can be found in Appendix HH.

The requirements of the MOU apply to any federal-aid highway project determined to be wholly or in part within a designated sole source aquifer area and to which includes one or more of the following features:

- Construction of additional through-traffic lanes or interchanges on existing roadways.
- Construction of new roadway of two or more lanes.
- Construction of rest areas or scenic overlooks with on-site sewage disposal facilities.
- Any project involving a new or existing well within a designated sole source aquifer area.
- Any other project that the FHWA, in consultation with the EPA, believes may have a potential to affect the designated aquifer through its recharge zone so as to create a significant hazard to public health.

The perimeter of the St. Joseph Aquifer location map is to be used for general guidance purposes only. The exact boundaries of this vulnerable source of drinking water have not been determined with precise accuracy. Projects located close to, but just outside of the designated perimeter of the St. Joseph Aquifer, particularly ones involving subsurface drainage structures, deep excavation or retention/detention basins should be coordinated with the EPA.

In addition, many valuable and sensitive aquifers have not been designated as sole source aquifers because no one has petitioned the EPA to do so or because they do not qualify for sole source aquifer designation because of drinking water consumption patterns. Ground water's value as drinking water and its vulnerability to contamination can vary considerably between and within designated aquifers. As a result, the EPA does not endorse using only legal designation as a sole source aquifer as the only or determining factor in making land use decisions that might negatively impact ground water quality.

### **Process**

Every EA or EIS-level project located in a legally designated sole source aquifer area will automatically require the preparation of a ground water impact assessment (GWIA). Although projects qualifying as CEs are specifically exempted from review by the EPA as per the MOU unless a review is specifically requested, it is INDOT policy that all CEs, level 2 and above shall include EPA on the list of early coordination recipients if the project is located within the designated boundaries of the St Joseph aquifer. Such coordination makes EPA aware of the proposed project and provides that agency with an opportunity to make comments.

The FHWA and EPA coordinate at the earliest possible time so that information necessary to prepare a GWIA can be collected, and so that the EPA's review comments can be incorporated into the environmental document.

In order for the EPA to provide a preliminary screening of the proposed project, the following information must be provided to the EPA:

- A project description including a summary of the project; its scope, purpose, construction details (if available) and federal funding source with identifying project number.
- Project location – a map and narrative explaining the location of the project relative to the designated area boundaries, with a brief description of the hydrogeology at the site.
- Contaminants – a discussion of the potential contaminants that may be used, transported, stored, etc., which could be introduced into the aquifer during construction and/or operation and maintenance. If quantitative data are available, include them.
- Secondary impacts – a discussion of potential contamination resulting from secondary impacts (e.g. increased industrial, commercial, or residential activities) as the result of the project.
- Any other available information pertinent to a determination of the potential impacts the project may have on ground water.

To aid the EPA in their review of the project and to move the process along as quickly as possible, the EPA also needs to be provided with all available design information including the proposed drainage system. It should be noted that the EPA typically will not allow the use of dry well or similar types of drainage structures for projects located in the St. Joseph aquifer, since such structures would provide a direct conduit for spilled materials to enter the aquifer.

The EPA reviewer must be satisfied that the proposed project does not have the potential to create a significant public health hazard, or that risks have been adequately mitigated. Mitigation measures may include construction of lined detention/retention basins with metered outflow, impermeable clay lined ditches or compartmented/vegetated side ditches.

Based upon the information provided, the EPA will make one of three determinations:

- The project does not require further review.
- A GWIA is necessary to determine the potential of the project to adversely affect the aquifer.
- The project has significant potential to contaminate the aquifer and requires modification to eliminate that potential before federal funds can be committed.

This determination is included in EPA's early coordination response letter. If a Sole Source Aquifer Screening is needed, this discussion can be included in the body of the environmental document. If a full GWIA is required, it is prepared as a separate, stand-alone document to be reviewed by the EPA. Specific guidelines for the preparation of a GWIA can be found in Attachment 4 of the MOU.

### **Area of Review**

The area of review is within and adjacent to the project area.

**Related CE/EA Form Section**

Sole Source Aquifers are discussed in Part III, Section B: Other Resources (Drinking Water Resources).

**References**

See the end of the [water quality section](#) for references.

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**II.C.4.d Wellhead Protection Areas****Background**

A wellhead is defined as the physical structure or device through which ground water flows or is pumped. A wellhead protection area (WHPA) is defined as the surface and subsurface area immediately surrounding a pumping well as per 327 IAC 8-4.1-1(27). A community public water supply system (CPWSS) is defined as a public water system that provides water for human consumption to a least 15 service connections used by year-round residents, or one that regularly serves at least 25 year-round residents (e.g., municipalities, subdivisions and mobile home parks).

Wellhead Protection Areas (WHPAs) were authorized by the 1986 Amendments to the Safe Drinking Water Act (SDWA). Each state has developed a State Wellhead Protection Program which required approval by the US Environmental Protection Agency (EPA). The SDWA and the Indiana Wellhead Protection Rule ([327 IAC 8.4-1](#)) mandates the preparation of a wellhead program for all community public water systems. The Ground Water Section of the Indiana Department of Environmental Management (IDEM) has been charged with the duties of administering the wellhead protection program which has been implemented to protect ground water drinking supplies from pollution.

The boundaries of a WHPA are usually determined by a mathematical ground water modeling analysis, but can be as simple as a fixed radius when certain requirements are met. A WHPA is provided special safeguards and other measures to protect the drinking water from becoming contaminated.

**Process**

For all projects that require early coordination, the preparer of the environmental document must determine whether or not the project lies within a WHPA. Approved WHPAs are no longer available on-line due to Indiana state legislation in 2003 classifying this type of information as confidential due to counterterrorism/homeland security requirements, so the following process has been established:

- From the [IDEM web page](#), download the Wellhead Protection Proximity Request Form in pdf format.
- Fill out the form completely.
- Return the fully completed form to the IDEM Ground Water Section either by email, fax or mail.

Upon receipt and subsequent to review, IDEM mails back the Wellhead Protection Area Proximity Determination documentation for the site in question.

IDEM's response to the submission of the Wellhead Protection Proximity Form includes only the location of WHPAs in the vicinity of a project. The preparer must coordinate with water districts, municipal engineers and other contact persons to obtain more specific information, including management measures and requirements. Contacts and other relevant information can be found by visiting [http://www.in.gov/apps/idem/sdwis\\_state/](http://www.in.gov/apps/idem/sdwis_state/).

Should the preferred alternative potentially impact a WHPA, the environmental document should contain compliance with those management measures and requirements discussed in the local wellhead protection program developed for the CPWSS. The potential impacts and possible mitigation measures should be evaluated for each alternative considered.

### **Area of Review**

The area of review is the watershed adjacent to the project that could be impacted by the construction and maintenance of the facility.

### **Related CE/EA Form Section**

Wellhead protection area impacts are discussed in Part III, Section B: Other Resources (Drinking Water Resources)

### **References**

Indiana Geological Survey *Groundwater in Indiana* December 2008  
<http://igs.indiana.edu/geology/water/gwinindiana/index.cfm>

Indiana Geological Survey *Groundwater* December 2008  
<http://igs.indiana.edu/geology/issues/groundwater/groundwater.html>

IDEM (2008) *Ground Water Glossary* December 2008  
<http://www.in.gov/idem/4285.htm>

EPA *Sole Source Aquifer Protection Program* December 2008  
<http://cfpub.epa.gov/safewater/sourcewater/sourcewater.cfm?action=SSA>

US EPA (1996) *Safe Drinking Water Act* December 2008  
<http://www.epa.gov/safewater/sdwa/text.html>

42 USC 300 et seq. (2004) *Protection of Underground Sources of Drinking Water* December 2008  
<http://frwebgate4.access.gpo.gov/cgi-bin/TEXTgate.cgi?WAISdocID=848758418033+0+1+0&WAIAction=retrieve>

23 CFR 771 (2005) *Environmental Impact and Related Procedures* December 2008  
[http://www.access.gpo.gov/nara/cfr/waisidx\\_07/23cfr771\\_07.html](http://www.access.gpo.gov/nara/cfr/waisidx_07/23cfr771_07.html)

INDOT (2007) *Indiana Waterway Permits Manual* December 2008  
<http://www.in.gov/indot/files/WaterwayManual.pdf>

IDEM (2007) *Wellhead Protection Program* December 2008  
<http://www.in.gov/idem/4289.htm>

IDEM (2007) *Source Water Protection FAQ* December 2008  
<http://www.in.gov/idem/4286.htm>

IDEM (2007) *Source Water Protection* December 2008  
<http://www.in.gov/idem/4142.htm>

IDEM *Wellhead Proximity Protection Request Form* December 2008  
[http://www.in.gov/idem/files/wellhead\\_proxform.pdf](http://www.in.gov/idem/files/wellhead_proxform.pdf)

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## II.C.5 Wetlands Impacts

### **Background**

Wetlands are defined by three different set of laws that are pertinent to transportation projects: [US Department of Transportation \(USDOT\) order 56601.A](#), [33 CFR 328.3\(b\)](#) and [Executive Order 11990](#). According to USDOT order 56601.A, wetlands are:

*Lowlands covered with shallow and sometimes temporary or intermittent waters. This includes, but is not limited to, swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, tidal overflows, estuarine areas, and shallow lakes and ponds with emergent vegetation. Areas covered with water for such a short time that there is no effect on moist soil vegetation are not included in the definition, nor are the permanent waters of streams, reservoirs and deep lakes.*

For regulatory processes, the US Army Corps of Engineers (USACOE) ([33 CFR 328.3\(b\)](#)) and Environmental Protection Agency (EPA) ([40 CFR 230.3](#)) jointly define wetlands as:

*...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*

Executive Order 11990 (Protection of Wetlands) calls for no net loss of habitats referred to as wetlands. According to this Executive Order, wetlands are driven by hydrology. The presence of water near the soil surface results in soil and plant characteristics that are not found in upland (mostly dry) or aquatic areas (almost always wet) and are generally found in transition zones between upland and aquatic habitats. All three definitions of wetlands include the three basic elements that are used in identifying wetlands: hydrology, vegetation and soil.

Section 404 of the [Clean Water Act](#), 1972, as amended in 1979, provides federal authority over jurisdictional wetlands. Section 404 relates to the discharge of fill material in “waters of the US” including wetlands, and establishes the USACOE as the federal agency responsible for permitting these impacts, with oversight by the Environmental Protection Agency (EPA). The US Fish and Wildlife Service (USFWS) has an advisory role to the USACOE with respect to potential wildlife or threatened and endangered species issues as authorized in the Fish and Wildlife Coordination Act, 1934, as amended.

Section 401 of the [Clean Water Act](#) also established a state regulatory authority over wetlands as they relate to water quality impacts. In Indiana, state authority over activities in surface waters and wetlands, including wetlands not under the jurisdiction of the USACOE, is administered by the Indiana Department of Environmental Management (IDEM).

The Supreme Court, in what is known as the SWANCC case ([Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, 531 US 159\(2001\)](#)), found that the USACOE cannot legally assert jurisdiction over isolated wetlands. This created two classifications of wetlands which must be discussed in the environmental document: jurisdictional wetlands and isolated wetlands. In the NEPA stage, wetland jurisdictional status must be identified to the extent that it is known, but otherwise jurisdictional and isolated wetlands are handled the same way. The difference between the two is evident in the permits and amount and type of mitigation that may be required. The USACOE will make a formal Jurisdictional Determination (JD) that will identify whether the wetland is jurisdictional or isolated. The JD is valid for five years.

[Presidential Executive Order \(EO\) 11990](#), entitled *Protection of Wetlands* and dated May 23, 1977, established a national policy to avoid adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands to the extent possible. New construction includes draining, dredging, channelizing, filling, diking, impounding and related activities. The EO requires a wetland finding for all federal undertakings which will have any impact on a wetland, whether direct or indirect.

The USDOT, in implementing EO 11990, set forth its policy on wetlands in [USDOT Order 5660.1A](#), *Preservation of the Nation’s Wetlands*, issued on August 24, 1978. USDOT Order 5660.1A requires the protection, preservation and enhancement of wetlands to the fullest extent possible during the planning, construction and operation of transportation facilities. New construction in wetlands is to be avoided unless practicable alternatives do not exist and the proposed action includes all practicable measures to minimize impacts to the wetland. In making a finding of no practicable alternative, economic, environmental, and other factors may be taken into account but additional cost alone is not sufficient to render an alternative or minimization measure impracticable.

In carrying out USDOT Order 5660.1A, the Federal Highway Administration (FHWA) implemented a wetland policy through [Technical Advisory T6640.8A](#), October 30, 1987, which provides guidance on the preparation of environmental documents, including the assessment of project impacts on wetlands.

The Technical Advisory prescribes a wetland evaluation methodology which calls for:

1. The identification of all wetland involvements along a project corridor.
2. An evaluation of the significance, uniqueness and function/value of each wetland.
3. An evaluation of project impacts on each wetland site.
4. An evaluation of all project alternatives including avoidance alternatives.
5. A formal wetlands finding stating that no practicable alternatives to the wetland taking exist, if such is the case.
6. An evaluation of all practicable measures to minimize harm to wetlands.
7. An evaluation of the reasonableness of mitigation measures proposed to reduce adverse impacts.

The [USFWS Classification System](#) (Cowardin, et al. 1979) has been recognized by the FHWA as the national standard for wetland identification. The [Wetland Evaluation Technique](#) (WET II), the Indiana Wetlands Rapid Assessment Protocol (INWRAP), the [Ohio Rapid Assessment Method](#) (ORAM), [Index of Biotic Integrity](#) (IBI), and Floristic Quality Assessment (FQA) are also acceptable methods to evaluate the functions and values of each wetland. Where appropriate, the USACOE approved [hydrogeomorphic](#) (HGM) evaluation model may be used as well. Currently INDOT has not selected an ideal method but each evaluation should identify the methodology that was used for the evaluation.

Mitigation is required for any impacts that cannot be avoided or minimized. Mitigation is the replacement of wetland impacts by the construction of another wetland, usually at a higher ratio than what was impacted. The agencies will determine the amount of mitigation required based on the type, value, function and impacted area of a wetland impacts. INDOT has a Memorandum of Understanding (January 28, 1991) with the Indiana Department of Natural Resources (DNR) and the USFWS concerning the type and level of wetland mitigation (Appendix EE). The FHWA's policy on mitigation can be found in [23 CFR 777.11](#) and the [Environmental Policy Statement](#) issued on April 20, 1990. The FHWA will participate in the costs of environmental mitigation for impacts as a result of federal aided projects, including the cost of acquiring lands to mitigate the impacts to wetlands. The purchase of mitigation sites and the construction of the wetland must comply with other federal laws, such as Section 106.

### **Process**

The first step in the process is to complete a wetland determination, which identifies all wetlands within and immediately adjacent to the project area using the National Wetland Inventory (NWI) maps (available on the [NWI website](#)), field visits and coordination with resource agencies (US Army Corps of Engineers (USACE), US Environmental Protection Agency, US Fish and Wildlife Service, and Indiana Department of Environmental Management). All wetlands that could potentially be directly or indirectly impacted by the project must be identified. A site visit should be conducted to verify that the information gathered from the NWI maps is accurate and to determine whether additional wetlands are present. The NWI maps are not particularly complete with many wetlands not included so field investigations are often needed.

If possible wetlands are identified in a project area a wetland delineation report is required. Though the wetland delineation is not required for the environmental document, it is strongly recommended to complete it at this time to encourage avoidance and minimization of impacts. If mitigation is needed, contact OES's Ecology Unit so that mitigation planning can begin as it sometimes takes two years to arrange. The identification of wetlands requires the consideration of an alternative that does not impact wetlands and a wetland determination/delineation report. These delineations must be conducted in accordance with the [U.S. Army Corps of Engineers Wetland Delineation Manual](#) of January 1987 and must be completed by a [qualified person](#).

For INDOT projects, all wetland determination/delineation reports are submitted to OES's Ecology Unit along with any necessary Waters of the US reports. The Ecology Unit reviews the report and submits it to the USACOE in support of a request for a formal Jurisdictional Determination (JD). This JD officially identifies whether the wetland is jurisdictional or isolated. The information included in the report and JD will inform OES in determining which permits will be required and to avoid or minimize impacts to wetlands in design. OES appreciates receiving preliminary JD's with permit applications at this time.

The wetland determination/delineation report should include:

- The location, type and acreage of each wetland present.
- The acreage and type of each wetland that is anticipated to be impacted by the project.
- Aerials and maps that identify the location of wetlands relative to the proposed project.
- Copies of delineation field data forms.

Larger, more complex projects with multiple proposed alignments will not require a detailed wetland study until a preferred alternative has been selected, but discussions of each of the proposed alignments should have some information about the amount and types of wetlands within each corridor to use for alternative screening and selection. Data gathered from NWI maps and site visits is acceptable for this level of review.

The following information must be included in the environmental document:

- The type, quality, importance and function of all wetlands identified.
- Description of the potential impacts for each alternative that is considered with respect to:
  - Total wetland acreage that will be used or modified.
  - Direct and indirect impacts.
  - Short and long-term effects.
  - Importance of any loss of function or value.
- For the do nothing alternative, an estimate of the acreage of wetlands that would be converted for other uses independent of the project (private development, etc.)
- Steps taken to ensure that all alternatives that would eliminate or minimize harm to the wetlands have been considered and adequately studied.
- Practicable measures to minimize harm to the wetlands.
  - Indicate what was considered.
  - Explain why each possible measure was accepted or eliminated.
  - Discuss all measures suggested by the DNR, IDEM, USFWS, EPA and USACOE.

- If found not to be practicable, include reasons that support that decision
  - Specify how the unavoidable use/modification of the wetlands can be justified.
  - Discuss all measures that were considered and why they are not practicable
- Aerial photos and maps of the wetlands and the proposed project.
- Documentation of all coordination and agreements with consulting parties.

For projects with wetland impacts greater than one (1) acre, Environmental Assessments (EA)/Findings of No Significant Impact (FONSI) and Environmental Impact Statements (EIS), the FHWA prepares a Wetland Finding for inclusion in the document. The CE document, FONSI or ROD will contain the Wetland Finding and is approved by the FHWA. The following should be included in the Wetland Finding:

- A reference to EO 11990.
- An explanation why there are no practicable alternatives to the proposed action.
- An explanation how the proposed action includes practicable measures to minimize harm to wetlands; and
- This concluding statement:

*Based upon the above considerations, it has been determined that there is no practicable alternative to the proposed new construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.*

If wetlands are identified, the final design must try to avoid or minimize impacts to wetlands, as is required by the permitting agencies. This can be done by bypassing the area, selecting another alternative or altering the project's typical cross section, side slope or retaining wall. Wetland impacts can be a significant encumbrance on INDOT, both in cost and in time delays. Therefore, avoidance or minimization of wetland impacts can reduce the time delay and potential cost of the overall project.

If mitigation is required, a suitable mitigation site must be located and approved by the resource agencies (USFWS, DNR, IDEM, and USACOE). A Wetland Mitigation and Monitoring Plan will also need to be prepared for the mitigation site. Mitigation sites should be managed as stand-alone documents if they are located outside of the project area or if mitigation is coordinated prior to approval of the environmental document for the project. If there is already an approved environmental document for the project and the project is within or adjacent to the previously-approved project footprint, mitigation sites should be documented as reevaluations.

### **Area of Review**

The entire project area and surrounding waterways should be included in the area of review for wetlands.

### **Related CE/EA Form Section**

Wetland impacts are discussed in Part III, Section A: Ecological Resources.

## References

Florida Department of Transportation (1999) *Project Management and Environmental Manual – Wetlands* December 2008 <http://www.dot.state.fl.us/emo/pubs/pdeman/pt2ch18.pdf>

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## II.C.6 Water Body Modification

### Background

Water body modification includes any activity that changes the course, current or cross-section of a water body, such as culvert installation, bottom excavation or channel relocation. These activities can impact water quality, in the immediate project area as well as adjacent areas due to changes in hydrology and habitat. These impacts can affect the health of wetlands, streams and wildlife in the affected areas, so they are regulated under several laws including the [Fish and Wildlife Coordination Act \(16 USC 661-666\)](#), the [Federal Water Pollution Control Act \(33 USC 1251 et seq.\)](#), the [Rivers and Harbors Act \(33 USC 401\)](#) and the [Indiana National Pollutant Discharge Elimination System](#) (NPDES) program. A variety of permitting programs have been put in place to analyze and mitigate for these impacts (see [Section II.C.9](#) for further details on permitting).

### Procedure

For each alternative under detailed study, the environmental document should discuss the location and extent of all water bodies (streams, rivers, jurisdictional ditches, reservoirs, lakes, impoundments, etc.). Streams and rivers should be classified by type (perennial, intermittent, ephemeral) and photographed as appropriate. The discussion should address whether they are considered navigable, and should also identify any use of the waterway with respect to water supply, recreation or other purposes.

If a function and value methodology such as [Headwater Habitat Evaluation Index](#) (HHEI) or [Qualitative Habitat Evaluation Index](#) (QHEI) is conducted for the project area streams, the evaluation forms and scores should be attached and explained. This explanation should include an indication of the stream habitat that is present and should state the methodology used to assess the quality.

All water bodies within the footprint of the proposed action must be identified and a waters determination report submitted through the District to OES, Ecology Unit (for State projects) for review and forwarding to the US Army Corps of Engineers (USACOE) for a jurisdictional determination. Projects that are local (LPA) should have the consultant submit them directly to the USACOE for formal determination. The environmental documentation should summarize agency coordination and any commitments or design issues resulting from that coordination.

The environmental document should explain whether each water body in the area will be impacted directly or indirectly, permanently or temporarily. If a water body is present but no impacts are expected, an explanation of why no impacts are anticipated should be included. Estimates of impacts should include an assessment of the riparian corridor that will be affected by each alternative, but wetland impacts should be assessed separately (see [Section II.C.5](#)).

If waterway impacts are anticipated, these should be quantified to the extent possible. The extent of in-channel work both up- and downstream of any structures should be described, including linear feet of work below the ordinary high water mark (OHWM). Of particular importance is the creation of impoundments or major channel changes such as relocation, deepening or widening, enclosure, realignment or placement of piers. If in-channel work will be extensive, a map or site plan should be included to aid in impact interpretation. Estimated impacts to wildlife resulting from the loss, degradation or fragmentation of habitat should also be described in this analysis.

Efforts to avoid, minimize, and mitigate for water body impacts that have been studied for each alternative should be described in the environmental document. Often coordination with resource agencies will result in commitments to mitigate impacts later in design, or through landscaping (i.e. revegetation of riparian corridors). Many of these commitments will be developed during the permitting phase, but some will be made as part of NEPA coordination and negotiation with resource agencies. To the extent these are known and are considered committed, efforts to mitigate should be included in the environmental document and in the Commitment Summary Form.

#### **Area of Review**

The area of review should include all water bodies within and downstream of the project area.

#### **Related CE/EA Form Section**

For CEs, Water Body Modification, Riverine/Stream impacts are discussed in Part III, Section A: Ecological Resources.

#### **References**

Indiana Administrative Code (2007) *Title 327 Water Pollution Control Board* December 2008  
[http://www.in.gov/legislative/iac/iac\\_title?iact=327](http://www.in.gov/legislative/iac/iac_title?iact=327)

Indiana DNR, Division of Water (2008) December 2008  
<http://www.in.gov/dnr/water/>

IDEM (2008) *401 Water Quality Certification Program* December 2008  
<http://www.in.gov/idem/4870.htm>

US Army Corps of Engineers Institute for Water Resources (2007) *Program: Regulatory* December 2008  
<http://www.iwr.usace.army.mil/waterresources/regulatory/regulatory.cfm>

US Fish and Wildlife Service (2007) *Permits* December 2008  
<http://www.fws.gov/permits/>

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## II.C.7 Floodplain Impacts

### Background

The purpose of a floodplain impacts analysis is to determine whether a transportation project will encroach on a 100-year floodplain and whether any encroachment will be significant. An encroachment is any roadway, fill, or structure within the limits of the floodplain, and is classified either as "transverse" (across the floodplain, such as a bridge) or longitudinal (along the floodplain, sometimes also called "latitudinal"). An encroachment is considered significant if it creates or increases a hazard to people, property, or the environment. A 100-year floodplain may also be called the base floodplain, the National Flood Insurance Program (NFIP) Zone A floodplain, or, in Indiana regulations, the regulatory floodplain. HUD regulations refer to this area as the Special Flood Hazard Area.

A floodplain consists of the floodway and the fringe. The floodway is the channel or area that will carry high-velocity floodwaters; it must be kept free of encroachment in order to carry floodwaters. The fringe is the remainder of the floodplain and is also called the backwater (this term has a different meaning in hydraulics). Floodwaters in the fringe area are low-velocity and encroachment may be permitted here under certain circumstances. Other than bridge piers, construction in a floodway is rarely permitted.

The floodplain impacts analysis also provides information needed for permitting the project. The Indiana Department of Natural Resources (DNR) administers the requirements of Indiana's floodplain management regulations ([312 IAC 10](#)) and the state's floodway permitting program. The US Army Corps of Engineers regulates jurisdictional waters (i.e. Waters of the US), which should be presumed to be coincident with the channel of a regulated floodway.

The most current floodplain map for a jurisdiction is available through the [Community Status Book Report for Indiana](#) on the Federal Emergency Management Agency's (FEMA) website. The type and quality of the floodplain map depends on the jurisdiction and the flood risk in that jurisdiction. The three map types are as follows:

- Flood Insurance Rate Map (FIRM): These maps delineate special hazard areas and areas of varying flood risk for the purpose of determining flood insurance rates for property owners.
- Flood Hazard Boundary Map (FHBM): These maps delineate boundaries of flood, mudflow, and related erosion areas that are special flood hazards. There is less information on a FHBM than on a FIRM, but both delineate the 100-year floodplain and are suitable for environmental review purposes. Many were issued by HUD's Flood Insurance Administration.
- Digital Flood Insurance Rate Map (DFIRM): These are digitized versions of the FIRMs and FHBMs that are available as GIS layers.

As of the date of this manual, FEMA is modernizing both the information and format of the floodplain maps. The new modernized maps will be in GIS-compatible format, as are the DFIRMs, but will be updated for changes (and errors) in structures and topography. The map modernization project is expected to be completed nationwide in 2010. Preliminary modernized map sets for some counties are available for viewing through the DNR's Office of Water but

should not be used for project evaluation until FEMA accepted them as effective in the *Community Status Book Report for Indiana*.

Interpretation of floodplain maps is based on locating the project area against the delineated flood zones. FHBMs show only Zone A, the 100-year floodplain. FIRMs show the following zones:

- Zones B, C, and X have less than 1 percent chance of flooding annually.
- Zone A and subcategories have a 1 percent or greater chance of flooding annually. Subcategories designate sheet flow, ponding, and protection or threat due to temporary or permanent flood control structures.
- Zone V and subcategories are coastal areas that have a 1 percent or greater change of flooding annually with additional hazards from storm waves. The shore of Lake Michigan is a coastal area.
- Zone D areas have possible but undetermined flood hazards.

### **Process**

Environmental documentation for all projects which receive federal aid or will require federal action must include an evaluation of all encroachments into regulatory floodplains. The standard for analyzing these impacts is the same regardless of the level of environmental documentation for the project. The results of this analysis will help with the development and analysis of the corridor and design alternatives.

Encroachments from new-terrain roadways have greater potential for floodway impacts than projects which involve relatively minor capacity or safety improvements. Therefore the preparer should investigate encroachments from these new alignment projects carefully. If the planning corridor is wide relative to the proposed roadway width, the preparer should note which encroachments can be avoided by shifting the right-of-way within the planning corridor. Planning corridors that are very narrow with respect to the proposed right-of-way width may not identify all encroachments. The evaluation will determine the appropriate assessment and documentation for different categories of work. The FHWA may require additional information on individual projects prior to granting design approval.

The first step is to determine whether the project area overlaps with a regulatory floodplain by examining the appropriate floodplain maps available from FEMA's website. If the project area does not overlap a floodplain, no further investigation is required. The following statement should be made in the environmental document for projects that are not located in the floodplain or that do not encroach on the floodplain:

*This project does not encroach upon the regulatory floodplain of the HUD Special Flood Hazard Area. Therefore, it does not fall within the guidelines for the implementation of 23 CFR 650, 23 CFR 771 and 44 CFR.*

If the project area overlaps a floodplain, the next step is to determine whether the project will encroach on the floodplain and whether that encroachment is significant. Floodplain impacts of individual project components are divided into five categories based on the extent of the

encroachment, which in turn determines the technical information that must be in the analysis of the impact and determines some aspects of mitigation. The categories are discussed below.

Specific language for describing impacts is associated with each category. Categories 1, 2 and 3 are minor impacts that do not involve replacing structures and require only certifying statements in the environmental document. Categories 4 and 5 involve replacing structures and require a flood risk assessment (see “Flood Risk Assessment”, Appendix U).

Categories 4 and 5 also require hydraulic design study for each new or altered structure in the project. The hydraulic design study addresses the impacts of various structure sizes on the flood risk within the floodplain. These are generally required for any major drainage structure, which is a bridge or culvert with a waterway opening greater than 100 square feet. The study is part of the engineering assessment.

It is possible that a single project will involve two or more of the categories listed below. When this occurs it is necessary to include information for each of the categories that may be involved. Each major drainage structure on the proposed project must be discussed and a determination made as to the significance of any encroachments. If a given situation does not fit a particular category, these guidelines should be used as a basis for developing a reasonable approach to fit that situation.

The extent of the discussion of floodplain impacts in the environmental document depends on the type and magnitude of impacts and on the type of environmental document. For an EIS, the floodplain discussion, with appropriate statements from the categories discussed below, is a section of the Environmental Resources, Impacts, and Mitigation chapter. The Environmental Resources, Impacts, and Mitigation chapter of the EIS and the commitments section and commitments summary of an EA or CE should also contain a commitment that the designer will summarize the resolution of floodplain issues in a report to the project file. For EAs and CEs, floodplain impacts are discussed in the Floodplains section. For all document types, the supporting documentation and FEMA maps are included in an appendix.

Category 1: Projects which will not involve any work below the 100 year flood elevation.

If the project is of the type that will not involve any work below the 100 year flood elevation (i.e. resurfacing, widening, bridge deck repairs, etc.) and the 100 year flood elevation is available from existing information, the following paragraph will be included in the environmental document:

*Although this project involves work within the horizontal limits of the 100 year floodplain, no work is being performed below the 100 year flood elevation and as a result this project does not encroach upon the base floodplain.*

Category 2: Projects which will not involve the replacement or modification of any drainage structures.

To fit in this category, projects must remain on essentially the existing alignment. If a profile grade elevation change is proposed, an inspection of the floodplain is required to determine if the change will significantly increase floodplain damage or risks.

It is assumed that there are no known drainage problems within the limits of the project or that other factors were considered to override the need for concurrent drainage improvements. The following information will be included in the environmental document:

*This project will not involve the replacement or modification of any existing drainage structures or the addition of any new drainage structures. As a result, this project will not affect flood heights or floodplain limits. This project will not increase flood risks or damage. Likewise, it will not adversely affect existing emergency service or emergency routes. Therefore, it has been determined that this encroachment is not significant.*

Category 3: Projects involving modifications to existing drainage structures.

Projects within this category will not involve the replacement of any existing drainage structures nor the construction of any new drainage structures. It is intended to apply only to those projects which modify existing structures. Some projects involving modifications of existing drainage structures affect flood heights and flood limits, and therefore some analysis may be necessary to support statements concerning the insignificance of such modifications. The environmental document should provide a detailed summary of any changes in capacity of the structures as described in the engineering assessment or hydraulic study. An inspection of the floodplain will determine if any expected increase in flood heights could result in significant damage not expected under current conditions.

A discussion similar to that which follows will be included in the environmental document:

*The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry flood water. This change could cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency routes; therefore, it has been determined that this encroachment is not significant.*

Category 4: Projects involving replacement of existing drainage structures on essentially the same alignment.

The site will be inspected upstream and downstream to determine existing conditions that affect the design of the replacement structure. A "Risk Assessment" will be made and coordination

with the DNR will take place. If no significant impacts are predicted, then a summary of the risk assessment and the following comment will be included in the environmental document:

*(Number) homes are located within the base floodplain within 1000 feet upstream, and (number) homes are located within the base floodplain within 1000 feet downstream. The proposed structure will have an effective capacity such that backwater surface elevations are not expected to significantly increase. As a result, there will be no significant adverse impacts on natural and beneficial floodplain values; no significant change in flood risks; and no significant increase in potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant. A hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. The designer will provide a summary of this study and a summary of the resolution of floodplain impacts for the project file.*

If significant impacts are determined, the following will be included in the environmental document:

*Significant impacts to the floodplain have been predicted, therefore, a hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. The designer will provide a summary of this study and a summary of the resolution of floodplain impacts for the project file.*

Category 5: Projects on new alignment.

For projects in this category, the preparer will perform a risk assessment to determine the potential flood risk at the project site and will coordinate with the DNR. If the evaluation finds no significant encroachment to the floodplain, a summary based on the risk assessment and a comment similar to the following will be included in the environmental document.

*There will be no significant impacts on natural and beneficial floodplain values; no significant change in flood risks; and no significant increase in potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant. A hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. The designer will provide a summary of this study and a summary of the resolution of floodplain impacts for the project file.*

If significant impacts are determined, a comment similar to the following will be included in the environmental document:

*Significant impacts to the floodplain have been predicted. Therefore, a hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. The designer will provide a summary of this study and a summary of the resolution of floodplain impacts for the project file.*

A copy of the Risk Assessment should be kept on file for Categorical Exclusion (CE) projects and be attached to the appendix of an Environmental Assessment (EA) or Environmental Impact Statement (EIS).

### **Area of Review**

The area of review is the temporary and permanent project right-of-way limits.

### **Related CE/EA Form Section**

Floodplain impacts are discussed in Part III, Section B: Other Resources, Floodplains.

### **References**

FEMA (2007) December 2008 [www.fema.gov](http://www.fema.gov)

Indiana DNR, Division of Water (2008) *Permits* December 2008  
<http://www.in.gov/dnr/water/9412.htm>

FEMA (2006) *Floods, Federal Emergency Management Agency* December 2008  
[www.fema.gov/hazard/flood/index.shtm](http://www.fema.gov/hazard/flood/index.shtm)

FEMA (2007) *Community Status Book Report (updated, all states available)* December 2008  
<http://www.fema.gov/fema/csb.shtm>

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## **II.C.8 Impacts on Wild and Scenic Rivers**

### **II.C.8.a Federal Wild and Scenic Rivers**

#### **Background**

In 1968, the [Wild and Scenic Rivers Act](#) was established by Congress, with the goal of preserving the character of rivers that possess outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values. The Act also serves to protect the immediate environment surrounding these rivers. A designated river is any river that has been added to the National Wild and Scenic Rivers System by Congress. The following are possible river designations:

- Scenic river areas are those that are free from impoundment, with shorelines or watersheds still largely undeveloped, but accessible in places by roads.
- Wild river areas are those that are free of impoundment and generally inaccessible, except by trail, with watersheds and shorelines essentially untouched and waters unpolluted.
- Recreational River areas are those that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

[42 USC Section 4321](#) of the National Environmental Policy Act (NEPA) also requires that impacts to Wild and Scenic Rivers are given consideration in the federal decision-making process.

[Section 5\(d\)\(1\)](#) of the Act directs all federal agencies to consider the potential for national wild, scenic and recreational river areas in all planning for the use and development of water and related land resources. Stream segments deemed “suitable” by an agency, but not yet approved by Congress, must be protected to maintain the characteristics that make them suitable. A wild, scenic, or recreational river area can be eligible for inclusion in the National Wild and Scenic Rivers System if it is a free-flowing stream and the related adjacent land area possesses one or more of the values referred to in [16 USC 1271](#) (also listed above).

Publicly owned waters of designated wild and scenic rivers are protected by [Section 4\(f\)](#), and public lands adjacent to these rivers may be subject to Section 4(f) protection as well. Section 4(f) only applies to wild and scenic rivers which are being used or designated on an approved land management plan for use as a park; recreation, wildlife, or waterfowl refuge; or for historic purposes. The determination of applicability of Section 4(f) is made through an examination of any adopted or proposed management plan for a listed river. The applicability of Section 4(f) is ultimately determined by the Federal Highway Administration (FHWA).

Currently there are no rivers in Indiana that have been officially designated by Congress into the National Wild and Scenic Rivers System to date. However, if a river eligible for designation is present in or adjacent to the proposed project, coordination must take place with the relevant local office. For waters eligible for inclusion in the National Wild and Scenic Rivers System, the Secretary of the Interior or the Secretary of Agriculture (where national forest lands are involved), or the two secretaries jointly, are required to study and submit proposals to the President on the suitability or non-suitability for addition to the System. The President then makes recommendations and proposals to Congress. The Maumee River is the only river in Indiana at this time that is designated for potential addition to the national wild and scenic rivers system. In accordance with [16 USC 1276\(d\)\(1\)](#) consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas.

### **Process**

For each alternative that requires the use or development of such waters designated as Wild and Scenic Rivers, the agency responsible for managing the river (either the National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), or the Forest Service (FS) provides information on the management plan, specific affected land uses and any necessary Section 4(f) coordination. If a proposed project will have an adverse impact on a river on the National Wild and Scenic Rivers System, or a river listed as a study river in the *Nationwide Inventory of Rivers with Potential for Inclusion in the National Wild and Scenic Rivers System*, early coordination needs to include the National Park Service (NPS) and the Department of Agriculture (USDA). The Maumee River is the only river in Indiana listed as a study river.

The environmental study should identify any potential significant adverse effects on the natural, cultural, and recreational values of the inventory river. Adverse effects include alteration of the setting, restricting the free-flowing nature of the river or degrading the water quality. If it is determined that the proposed action could foreclose options to designate the river under the Act,

the environmental study should reflect consultation with the NPS and USDA on avoiding or mitigating the impacts.

### **Area of Review**

The area of review is all water bodies within and near the project limits.

### **Related CE/EA Form Section**

In the CE/EA form, Wild and Scenic Rivers are discussed in Part III, Section A: Ecological Resources

### **References**

US Code (2006) *16 USC Chapter 28* December 2008 <http://frwebgate1.access.gpo.gov/cgi-bin/TEXTgate.cgi?WAISdocID=91461525847+0+1+0&WAIAction=retrieve>

FHWA *Environmental Guidebook: Wild & Scenic Rivers and Wilderness Areas* December 2008 <http://environment.fhwa.dot.gov/guidebook/Results.asp?selSub=101&Submit=Search+Guidebook>

Utah DOT (2008) *Environmental Assessment Guidelines and Instructions for Authors and Reviewers* December 2008 <http://www.sr.ex.state.ut.us/main/uconowner.gf?n=200602280903241>

*Wild and Scenic Rivers Act* December 2008 <http://www.rivers.gov/wsract.html>

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## II.C.8.b State Natural, Scenic, and Recreational Rivers

### **Background**

State law ([IC 14-29-6](#)) designates the Indiana natural, scenic and recreational river system to be set aside and preserved for the benefit of present and future generations. Scenic rivers are defined as those which are free of impoundments, accessible in several places, and have minimal pollution and shoreline developments. Recreational rivers are those which do not have the characteristics necessary to qualify as a natural or scenic river, but that still maintain scenic or recreational characteristics of unusual or significant value. In accordance with IC-14-29-6-10, the impact of the proposed use and development will be determined when planning for the use and development of water and associated land resources within the system. The preparer will review and evaluate the river as a scenic resource and will provide the Department of Natural Resources (DNR) with the opportunity to review these impacts. Indiana law [312 IAC 7-2](#) identifies three waterways included in the system: the Big Blue River, Cedar Creek, and Wildcat creek.

The DNR has prepared the [Outstanding Rivers List for Indiana](#) to recognize scenic and recreational river resources of Indiana. This list designates rivers of high quality, which qualify for the list under one or more of the 22 categories listed on the Natural Resources Commission,

[Information Bulletin #4](#). The intent of this list is to provide guidance, except where the items are required by law (i.e. floodways, logjams). National Wild and Scenic Rivers, National Wild and Scenic Study Rivers, and Indiana natural, scenic, and recreational rivers are categories 1, 2, and 4.

### **Process**

The environmental document should include a discussion of any rivers listed in the Indiana natural, scenic, and recreational river system and any Outstanding Rivers within the project area and whether they will be impacted. This discussion should include a description of the characteristics of the river that qualify it as outstanding.

### **Area of Review**

The area of review is designated water and associated land resources in the natural, scenic, and recreational river system in and surrounding the project area.

### **Related CE/EA Form Section**

Impacts to Indiana natural, scenic, and recreation rivers are discussed in Part III, Section A: Ecological Resources.

### **References**

Indiana Code (2007) *IC-14-29-6* July 2007

<http://www.ai.org/legislative/ic/code/title14/ar29/ch6.html>

DNR (1997) *List of Outstanding Rivers* November 2006

<http://www.in.gov/legislative/register/20070530-IR-312070287NRA.xml.pdf>

Indiana Register (2007) *Natural Resources Commission Information Bulletin #4* July 2007

<http://www.in.gov/legislative/register/20070530-IR-312070287NRA.xml.pdf>

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## **II.C.9 Waterway Permits**

### **Background**

A permit is an authorization to perform a regulated activity in a specific manner. Waterway permits are products of environmental laws and the primary means by which regulatory agencies achieve compliance with federal, state, and local environmental regulations. Some environmental impacts require permits from the federal or state agency charged with regulating the environmental resource. The Clean Water Act gives the U.S. Army Corps of Engineers (USACE) the responsibility of regulating the placement of fill in waters of the U.S. Indiana State Law gives the Indiana Department of Environmental Management (IDEM) the responsibility of regulating isolated wetlands and other State waters. Projects affecting waterways may also be regulated by the Indiana Department of Natural Resources (DNR), County Surveyor's Office and or the Environmental Protection Agency (EPA). Waters of the US Determinations and other technical documents prepared by the Office of Environmental

Services (OES) or district environmental scientists are heavily relied upon to determine what environmental permits will be required.

A large portion of the permitting process involves meeting permitting agencies' requirements to avoid, minimize and mitigate for environmental impacts. Obtaining proper permits for INDOT projects can take anywhere from 30 days to 20 months depending on the types of permits required. This time frame is heavily dependant on permitting agencies' review period (30 days to 18 months depending on specific permit type). For a detailed discussion of the various types of permits and permitting in general, see [Indiana Waterway Permits Manual](#).

The following waterway permits may be required for INDOT projects. This list is not all-inclusive.

- USACOE 404 Permits
- USACOE Section 10 Navigable Water Permits.
- USACOE Levee Permit.
- U.S. Coast Guard Section 9 Bridge Permit
- EPA Class V Injection Well Permits.
- EPA Sole Source Aquifer Permit.
- IDEM Section 401 Water Quality Certification (WQC)
- Waters of the State.
- IDEM Isolated Wetland Permit.
- IDEM Rule 5 Erosion Control
- IDEM Section 402 National Pollutant Discharge Elimination System (NPDES)
- Indiana Department of Natural Resources (DNR) Construction in a Floodway Permit.
- DNR Navigable Waterways Permit.
- DNR Lake Preservation Act.
- DNR Lowering of Ten Acre Lakes Act.
- County Regulated Drain Permit – (Allen, Elkhart, Hamilton, Lake and LaPorte Counties).

For detailed information on the above permits see [Indiana Waterway Permits Manual](#).

### **Process**

A determination of which waterway permits are required is conducted for particular projects at different stages depending on which class of environmental document is required (CE, EA or EIS). All environmental documents should reference and briefly discuss all permits that are anticipated to be required for the project and note whose responsibility it will be to obtain the permit(s). The preparer of the environmental document should complete this list of anticipated permits based on the information available at this stage.

Using the information that is available at the time the document is being written, the environmental document should discuss potential adverse impacts that will require permits, and identify proposed mitigation measures. For proposed actions requiring a Section 404 or Section 10 permit, the environmental document should identify (by alternative) the general location of each dredge or fill activity, discuss the potential adverse impacts, identify proposed mitigation measures, and include evidence of coordination with the USACOE (in accordance with the U.S.

DOT/USACOE Memorandum of Agreement) and other appropriate resource agencies. Where the preferred alternative requires an individual Section 404 or Section 10 permit, the environmental document should identify the approximate quantities of dredge or fill material at each location, general construction grades and proposed mitigation measures. For proposed actions requiring Section 9 (U.S. Coast Guard bridge) permits, the environmental document should identify (by alternative) the location of each permitted activity, potential impacts to navigation and the environment, proposed mitigation measures and evidence of coordination with the U.S. Coast Guard (in accordance with the FHWA/U.S. Coast Guard Memorandum of Understanding). Where the preferred alternative requires a Section 9 permit, the environmental document should also identify, for each permit activity, the proposed horizontal and vertical navigational clearances and include an exhibit showing the various dimensions.

The environmental document should include evidence that every reasonable effort has been made to resolve the issues raised by other agencies regarding activities that require a permit. If important issues remain unresolved, the environmental document must identify those issues, the positions of the respective agencies on the issues and the consultations and other efforts made to resolve them.

If an individual Section 404 Permit, IDEM 401 WQC or IDEM Isolated Wetland Permit is required, a discussion of the anti-degradation alternatives in accordance with anti-degradation rules and 401 WQC rules ([327 IAC 2-1.5-4](#)) should be included in the environmental document.

In order to comply with Section 404(b)(1), the environmental document must demonstrate that for any proposed discharge into an aquatic ecosystem both the do-nothing and the wetland avoidance alternatives are not practicable in accordance with Section 404(b)(1).

Once the environmental document (CE, EA or EIS) for an INDOT project is near completion and the project's design stage is almost finished (60 percent design) the designer should request that a Final Permit Determination (PD) be done by OES. At this point the appropriate permit coordinator from OES will use the environmental document and information submitted by the designer, included in the PD request, to complete the PD. Once the PD has been completed by the permit coordinator it is returned to the designer. If wetlands or streams are impacted, avoidance and minimization should be considered as early in the project process as possible. If mitigation is required, a mitigation and monitoring plan will need to be prepared and submitted to the OES Ecology Unit for review. The permit coordinator will submit the mitigation and monitoring plan to the permitting agencies (USACOE, IDEM, etc.) for impacts that could not be avoided in conjunction with the permit application. For LPA projects, the designer is responsible for conducting the permit determination and managing mitigation.

When the design is completed for an INDOT project, the designer is to submit a permit application package to OES which the permit coordinator will use to apply for the necessary permits. As permits are issued by the permitting agencies, the permit coordinator will send the designer and the project manager a copy of each permit issued. For LPA projects, the designer is responsible for preparing and submitting the permit applications.

For a detailed discussion of the various regulatory requirements of permits, see [Indiana Waterway Permits Manual](#).

### **Area of Review**

The area of review is all water bodies touched by the project limits and any receiving waters.

### **Related CE/EA Form Section**

Waterway permits are discussed in Part III, Section I: Permits Checklist.

### **References**

INDOT (2007) *Indiana Waterway Permits Manual* December 2008

<http://www.in.gov/indot/files/WaterwayManual.pdf>

EPA *Permits* December 2008

[http://nlquery.epa.gov/epasearch/epasearch?typeofsearch=epa&areaname=&areasidebar=epahome\\_sidebar&filter=&result\\_template=epafiles\\_default.xsl&querytext=Permits](http://nlquery.epa.gov/epasearch/epasearch?typeofsearch=epa&areaname=&areasidebar=epahome_sidebar&filter=&result_template=epafiles_default.xsl&querytext=Permits)

IDEM (2008) *Permits* December 2008 <http://www.in.gov/idem/4088.htm>

DNR (2008) *Permits* December 2008

<http://www.in.gov/dnr/water/9412.htm>

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## **II.D. Mitigation, Commitments and Recommendations**

### **Background**

Commitments are any promise made by a project sponsor to take an action in the future, or to verify that certain undesirable or illegal actions will not be taken. Typical environmental commitment sources include early coordination with agencies, conditions of programmatic agreements, permit conditions, and components of Section 106 Memoranda of Agreement, Biological Opinions, among others. They may include actions committed to be undertaken at a future time, but also may describe resources (e.g. wetlands or historic properties) that must be avoided. Tracking of commitments typically begins in the NEPA phase, but additional commitments may be made in the course of additional project development that must be tracked as well. These may include establishing plans for maintenance of traffic, coordinating with utilities, or concessions that may be made in the context of real estate negotiations. The Federal Highway Administration (FHWA) requires ([23 CFR 771 .109 \(b\)](#)) that project sponsors track and confirm compliance with all commitments made during the National Environmental Policy Act (NEPA) process.

### **Process**

Commitments are tracked on a Commitments Summary Form (Appendix G - a sample completed form can be found in Appendix H), which should be carried through the full project development process, including the design, real estate and construction phases. As shown on the

document, all commitments must be divided into those which are Firm Commitments and those which are designated for further consideration. Firm commitments are often conditions of permits or land purchase agreements, and are not considered flexible or subject to revision. Commitments for further consideration may be amenities that would beautify or improve the project's surroundings but are not strictly required by any legal or contractual obligation. These could include project elements identified under a Context-Sensitive Design approach. More flexibility and choice are allowed with these commitments, and some may be eliminated as infeasible as the project is developed.

Those developing a project must make every effort to comply with commitments as written, but in some cases they will need to be revisited. For example, a proposed mitigation approach may no longer be practical or necessary, or additional mitigation may be necessary due to unanticipated impacts. If such a case arises, the person requesting a revision must contact the party who made the original commitment with an alternative approach to achieving the goal. This may require recoordination with resource agencies, the public and the Federal Highway Administration, depending on the nature of the commitment, the scale of the change and the class of environmental document covering the project. Since this consultation and revision process may require activities beyond the scope of a consultant's contract, or may take place after a consultant's contract has expired, it should generally be carried out by INDOT personnel.

At the completion of NEPA, a copy of the Commitments Summary Form should be uploaded into the Electronic Records Management System (ERMS) for later reference. The editable version of the document is forwarded to the project manager for tracking and updating in later stages of project development.

As the project develops, all commitments marked for further consideration should be resolved so that they are either included in the project or are removed as unrealistic or incompatible with other project needs. By the time a project is ready for contracts, only firm commitments should remain. The project manager will upload this completed commitment form to ERMS for inclusion in the project's contract documents.

### **Area of Review**

The area of review for project commitments will correspond to the area of review for resources being affected (such as the Area of Potential Effect for historical properties). In other cases, commitments may be procedural in nature, such as a commitment to conduct further public involvement.

### **Related CE/EA Form Section**

Commitments are listed in Part III, Section J, Environmental Commitments and in the Commitment Summary Form.

### **References**

AASHTO (2006) *Practitioner's Handbook: Tracking Compliance with Environmental Commitments* December 2008 <http://environment.transportation.org/pdf/PG04.pdf>

FHWA (1994) *Federal Highway Administration Environmental Policy Statement* December 2008 [http://www.fhwa.dot.gov/environment/eps\\_txt.htm](http://www.fhwa.dot.gov/environment/eps_txt.htm)

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